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ORIGINAL ARTICLES.

TUBAL PREGNANCY; WITH SPECIMEN OF CASE.

Read in the Section on Obstetrics and Diseases of Women, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY C. R. REED, M.D.,

OF MIDDLEPORT, OHIO.

The recent advances in abdominal surgery have given the subject of tubal gestation a new interest to the profession. Before this advance in the treatment of extra-uterine pregnancy, a diagnosis of ectopic gestation was followed by a prognosis equivalent to a death-warrant to the unfortunate woman who was the subject of a misplaced embryo. Under the title "Tubal Pregnancy," (and Mr. Lawson Tait says: "all cases are tubal in their origin") we include tubo-ovarian, tubal, tubo-uterine or interstitial, and abdominal, as practically these distinctions are of little importance. We will not stop here to discuss the causes of ectopic gestation, as it is well-known that if the ovum in its passage from the ovary to the uterus comes in contact with healthy spermatozoa, it is there impregnated, and fixes its habitation and commences its growth. If fecundated while in the ovary or after it reaches the uterine cavity, it has room to grow to a mature fœtus, but if it meets the fertilizing element while in its narrow road, and loiters, it fixes its abode there, and while it has the power to appropriate the material or food necessary for its life and growth from the tissues surrounding it, it has not the faculties of reason and judgment to provide for the future by enlarging its home, as its growing needs require, and it violently assails and destroys its hostess.

The proportion of extra- to intra-uterine pregnancies is given by Bandl as but one in 12,000, while Alexander Simpson states that many cases of hæmatocele associated with one or two months amenorrhœa are really extra-uterine fœtations. Many cases of sudden death in women from two to six months pregnant, are attributed to cardiac diseases, in which an autopsy would reveal Fallopian rupture from tubal gestation. Mr. Tait[1] states that he has known of twenty post-mortem examinations of women who died from ruptured tubes. Two have recently occurred in this vicinity, and I am of opinion that the anomaly is more frequent than heretofore believed. Without an ante- or post-mortem abdominal incision there is no way of demonstrating the existence of tubal pregnancy, the certain proof is wanting; in most cases there are but the usual symptoms of normal gestation until pain, shock and prostration occur, or what Barnes calls "abdominal shock and collapse." The gravity of the symptoms will depend on the extent of the rupture and amount of the hæmorrhage; if the latter is great, there is coldness of the surface, extinction of the radial pulse, pallor of the surface, whiteness of lips, tongue and conjunctiva, great muscular prostration while the mental faculties are preserved. If the woman rallies from the shock, or death does not occur in the cold stage, then follow general peritonitis, with tympanites, and abdominal tenderness on pressure, dorsal decubitis, thoracic respiration, nausea and vomiting, high temperature, rapid and feeble pulse, septicæmia and death. If the peritoneum is not ruptured, and the cyst passes into the folds of the broad ligament, hæmorrhage may be arrested, and but slight; the symptoms subside and the patient apparently recovers; but unless the embryo dies, it will continue to grow and a new danger awaits the doomed woman. In the tubo-ovarian form the pregnancy may continue to term, the fœtus dying is converted into an adipocire or a lithopœdion and may be retained an indefinite period, in one instance fifty-six years. Inflammation and suppuration may occur around the fœtal cyst, and it may be discharged through the walls of the abdomen, the vagina, the bladder or bowel. The stage of gestation at which rupture takes place may vary from two weeks to several months, depending on the location of the cyst. Rokitansky gives an instance of rupture in two weeks, and the average in tubal and tubo-uterine is probably two months.

There are no pathognomonic symptoms, and the diagnosis is usually obscure. Many of the prominent symptoms have been given in the history of the anomaly, and need not be repeated here. If called to see a woman during the child-bearing period, who has been suddenly attacked with pain in inguinal region or lower part of abdomen, attended with the usual symptoms of severe hæmorrhage, as shock, cold surface, clammy perspiration, absent radial pulse, pallor of lips, tongue and conjunctiva, and absence of external hæmorrhage, with mental faculties intact; and on inquiry learn that she has missed one or more menstrual periods, that her breasts have been enlarged, and irregular enlargement of abdo-

[1] Diseases of the Ovaries and Oviducts.

men, with the ordinary attending nausea and vomiting, and without other means to account for her sudden illness, it may be presumed that she had extra-uterine pregnancy; that the tube was ruptured and severe hæmorrhage had taken place; and the subsequent history will confirm the diagnosis. The presumption of ectopic gestation will be still stronger if the woman has been sterile for a number of years, for as stated by Tait, in his work previously referred to, "It is somewhat remarkable, and I think it is in favor of the views of the pathology of tubal pregnancy which I have advanced, that the majority of the instances of this abnormality occur in women who have not borne children previously, or in those who have had no children for many years. This point in the history of the patient is therefore always noteworthy."

The prognosis, when gestation is attended by the above symptoms, is always grave. Rupture of the fœtal cyst, with fatal hæmorrhage, in all cases of tubal pregnancy, may be expected at any period after six weeks or even one month. In 500 cases collected by Parry rupture occurred in 174, or in 34.8 per cent. Maygrier gives a table of fifty-six cases of rupture followed by death; in only nine was the fatal result immediate, the deaths occurring from several hours to several days. The prognosis is much more favorable under the improved methods of modern abdominal surgery. With the expectant treatment as taught by Barnes and others up to within the past decade, the mortality was fearful; but now by prompt surgical interference, we may expect to save a large proportion. The timid physician should not undertake the treatment of these cases, but call to his aid the bold, intelligent surgeon; in medicine alone there is no hope for the doomed woman, but in modern abdominal surgery she has a chance for her life.

Treatment.—The treatment of extra uterine gestation is curative; by the use of such means as will arrest the growth of the embryo or fœtus by destroying its life; as puncturing the sac and evacuating the liquor amnii; by injecting the sac with solutions of morphia, atropia, iodine, strychnia, etc.; by passing a current of electricity through the embryo; all of these except the latter, we believe, have been abandoned, and of electricity Parvin says: "Though the life of the fœtus be destroyed by electricity, the latter remaining in the abdomen of the mother may still be a source of disability, or even danger." The removal of the fœtus by elytrotomy or through the vagina has had its advocates, but is now abandoned for laparotomy or abdominal incision. Thomas advises elytrotomy if the fourth month of gestation be passed and the tumor low down in the pelvis. Maygrier takes the position that elytrotomy should not be done if the fœtus is living, but that laparotomy is preferable. "In either operation the placenta should not be removed." Barnes[2] says: "Lesouf has rightly said that every woman who has become the subject of an extra uterine gestation is doomed to more or less speedy death." This is eminently true of tubal gestation. . . . The question has often been discussed whether it is not advisable to perform gastrotomy with a view to removing the embryo and effused blood, and checking further bleeding by tying the Fallopian tube on the proximal side of the sac, and cutting away the sac. I can hardly imagine that this idea will ever be successfully carried out in these cases of early tubal rupture. In the first place, the greater number of subjects die within a few hours from the primary shock of the injury and hæmorrhage. "Removal of the blood by gastrotomy must add to this shock, and cannot restore the lost blood. . . . . I fear the actual state of science has no resource beyond the old one of rallying the patient from collapse by cautious administration of stimulants, of procuring rest by opium, and by controlling inflammation, if the patient survives until this conservative process sets in."

Later authorities in rupture of the cyst advocate immediate abdominal incision. Parvin[3] says: "The general practice is to endeavor, by external means, to arrest the hæmorrhage and sustain the patient." But in view of the recent successes of Mr. Tait, who in less than three years has performed laparotomy in twenty one cases of tubal pregnancy immediately after rupture occurred, saving twenty women, it may be accepted that in all such cases, especially if grave hæmorrhage occur, the abdomen should be opened, the cyst, if possible, and its contents, with the clots, removed, the bleeding pedicle ligated, and the peritoneal cavity cleansed. Mr. Tait's success vindicates the position ably maintained by Stephen Rogers,[4] in 1867. This success, too, presents a striking contrast with the mortality of that expectant treatment. Thomas states that in five cases of rupture of the sac, no operation being done, death occurred in four.

Mr. Lawson Tait[5] says: "There are but two forms of misplaced conception. In one the oviduct bursts, the peritoneum remaining uninjured, after which the ovum escapes into the broad ligament, between the folds of which its development continues. In the other variety the peritoneum is lacerated as well as the walls of the tube, and the ovum finds its way into the cavity of the abdomen, and that tubal pregnancy may become intra-peritoneal or extra-peritoneal, just as the tube happens to burst. The intra-peritoneal termination is the more common, and the more fatal, while the extra-peritoneal development of the ovum is much rarer, less fatal, and far more amenable to treatment. The class of cases which we see at the time of tubal rupture are generally included under the head of intra-peritoneal hæmatocele. I have very little doubt, however, that many of these cases would be saved by prompt action. I have twice been on the point of performing abdominal section on account of suspected rupture of a Fallopian tube, and have been prevented by scruples as to the correctness of the diagnosis. In both cases post-mortem abdominal section showed that the suspicion was correct, and I believe both

[2] "Diseases of Women," 1873.

[3] "Science and Art of Obstetrics," page 314.

[4] "Trans. American Medical Association," vol. xviii.

[5] "Diseases of the Ovaries," 4th edition, written four years before the above quotation from Parvin.

of these patients might have been saved. A hesitation in opening the abdominal cavity was natural enough when we were overburdened with the superstition that it was a very serious step; but now that we know it can be done with perfect safety, I would not hesitate to explore in a case where I suspected a Fallopian rupture. If my suspicions were verified I would apply a ligature to the rupture after I had completely emptied the sac, or I would completely remove the broad ligament, or perhaps stitch it to the abdominal wound and drain it, as I have done in pelvic abscess, etc. In this way I think some of these terrible cases might be saved."

Mr. Tait's recent successes, as quoted above from Parvin, verify his opinions as he predicted time and experience would. The above quotations are inserted here, as they so well exemplify the following case:

Mrs. M., aged 37, mother of two children, youngest 14 years, of fine physique and health, was attacked on the afternoon of March 9, 1887, with pain in region of left ovary, with nausea and faintness, sufficient to confine her to bed until her usual bedtime. An effort to rise from bed would increase the pain and nausea. As she had had similar slight attacks of pain the past ten days she thought little of it, and attributed the pain to ovarian neuralgia, to which she had been subject, and her husband being from home, did not send for a physician. She had occasional pain during the night, but slept fairly well.

On the following day, at 9 A.M., I was called in haste to see her, as she was thought to be dying. I found her pulseless at the wrist, her face, lips, tongue and conjunctiva apparently bloodless, surface cold, and about the only indication of life noticed was when I asked what was the matter. She feebly responded she had a severe attack of neuralgia of left ovary, coming on when she arose from bed and was dressing. She was a woman of much intelligence, with a good knowledge of anatomy and physiology. On getting the above history of her case I said: "Mrs. M., you are having hæmorrhage." She answered, "No, I have had none." I asked if she had missed a menstrual period; she said, "One, and am near the next one."

Diagnosis.—Tubal pregnancy with rupture of left tube and hæmorrhage into, probably, the peritoneal cavity. She was given a full hypodermatic injection of atropia and morphia; she and her husband were told of the probable nature of her illness, and he was informed of a fatal prognosis and the necessity of immediate abdominal section, and consultants were sent for.

At 1 P.M. she was again seen, in consultation with two physicians. She had rallied slightly under the influence of the atropia, the morphia had relieved the pain, and there were indications of approaching reaction and a probable cessation of the hæmorrhage. All of the counsel not agreeing in the diagnosis, an expectant course of treatment was adopted. Stimulants and anodynes were given in small doses; large injections of hot water into the bowel by fountain syringe, which were retained and absorbed. During the night of the 10th atropia, alcohol, and external heat were necessary to sustain animal temperature, and she barely lived through the night. During the night there was slight hæmorrhage from the vagina, which did not recur. An examination *per vaginam* was negative in results; *per rectum* indicated a large hæmatocele, or enlarged uterus; the latter proved correct.

On the morning of the 11th condition slightly improved. Radial pulse still absent, bloodless appearance, cold surface, mental faculties intact. Same counsel. Diagnosis: large hæmatocele. Treatment: stimulants, anodynes, external heat, iced milk. Prognosis more favorable.

March 12, 8 A.M. Condition apparently improved; radial pulse now perceptible, 128; reaction, upper portion of abdomen resonant on percussion, lower dull or flat. During the day abdomen became tympanitic and tender; peritonitis well marked with nausea and vomiting. Treatment: morphia hypodermatically, ice internally, calomel in small doses, and bismuth in large, to control vomiting; turpentine stupes over abdomen.

13th. Pulse 120, moderate force, paralysis of bladder and bowels, tympanites increasing, abdominal tenderness, nausea and vomiting; treatment continued; during the day vomiting ceased, iced milk and buttermilk were retained, calomel and bismuth discontinued.

14th, 7 A.M. Pulse 124, less force, tympanites and tenderness continue, respiration thoracic, enemas of oil and turpentine moved the bowels freely, contents healthy, strength failing, mental faculties preserved.

9 P.M. Mind wandering, strength failing, restless, breathing thoracic and shallow.

15th, 5 A.M. Radial pulse absent, unconscious, died 8 A.M., five days from the severe attack of pain and collapse.

Autopsy, 16th, 8 A.M., 24 hours after death. On opening the abdomen in the median line from one-half to a gallon of fluid and clotted blood was found in lower abdominal and pelvic cavities. The intestines were healthy, with no adhesions; general peritonitis; no decomposition of contents of peritoneal cavity. After removing the blood search was made for the source of the hæmorrhage; on lifting up the left uterine appendages a rent was found in the Fallopian tube one inch from the uterus; a cyst-nidus, the size of a common walnut (I present the specimen for examination). The uterus was large and erect, the right appendages healthy; these, with the uterus, for reasons not necessary to state here, were not removed.

Mrs. M. died, not directly from the loss of blood, but from its retention in the peritoneal cavity, exciting fatal peritonitis. The details of this case are given, as I think it teaches a lesson. A similar case, with specimen, was presented to the Philadelphia Pathological Society, Nov. 12, 1885, by Dr. Formad, and published in THE JOURNAL, Vol. v, No. 22, page 609. From the history of the above case, and the teachings of modern abdominal surgery, was the patient treated as the symptoms indicated? and did she have a fair chance for recovery? We answer, "No." We believe stimulants and an anæsthetic

should have been given; the abdomen promptly opened; the blood removed, the left appendages removed, the cavity cleansed, a drainage tube inserted, the incision closed, and Mrs. M. would have had at least two chances in three for recovery. But other counsel prevailed, the expectant treatment was adopted, the old teachings of Barnes on tubal gestation, and Thomas on hæmatocele, were followed, and Mrs. M.'s life was a sacrifice to the ignorance and timidity of her physicians. It might be said that in her collapsed condition operation would have been fatal. Hot water should have been injected into the bowel, applied to the abdomen and extremities, the abdomen opened and the cavity irrigated with hot water, and she would have rallied from the shock. On the third day, at the beginning of the peritonitis, there was sufficient reaction, and then, if not before, the operation should have been done.

THE MEDICAL JURISPRUDENCE OF MENTAL AND NERVOUS DISEASES.

Read in the Section on Medical Jurisprudence, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887,

BY S. V. CLEVENGER, M.D.,
OF CHICAGO, ILL.

Insanity may be regarded from three prominent standpoints: the philosophical, the medical, and the legal. How soon there shall be consonance of views depends upon when there shall be general recognition of what is known about mental diseases.

Were the modern philosophical conclusions to prevail there would be no distinction between crime and insanity; society would simply adopt measures to protect itself against both as equally dependent upon faulty organization or function and more attention would be paid to circumventing the higher grade of criminals who seldom figure as such: the demagogue, the social hypocrite, and the unscrupulous millionaire gambler. It will be long before the populace comprehends that unjust judges, a Senate crowded with Neros and a feeble array of intelligence in the lower house can work more disaster than Bedlams and jails let loose; but the trend of enlightenment is toward mercy to the weak and protection against oppressors. Dr. Wm. D. Robinson, physician to the Eastern State Penitentiary of Pennsylvania, (in a paper read before the Philadelphia Neurological Society, March 28, 1887) says that the major part of state prison offenses were the acts of men born members of the crime class of people. "They are one of the morbid excrescences from Society, and in progeny reproduce their peculiar kind. As the cancer cell lodged in a neighboring gland develops a growth identical in make up with its paternal source so the offspring of the crime class belie not their origin.

"These people very seldom reform, but in death end lives passed in crime and infamy. They have absolutely as little control over their natural inclinations to wrong doing as the confirmed periodical drunkard has over desisting from his spree.

"They really see very little moral wrong in their crimes—the crime with them being detection. They truly believe that the man who assists in their detection and aids in their being brought under the law is much worse than themselves.

"Crime is unquestionably a monomaniacal infatuation with them. Statistics, attested facts and direct attainable evidence clearly warrants this assertion. It is not an unusual case to have them acknowledge that they prefer the excitement of getting one dollar unlawfully to earning ten honestly."

Dr. Robinson goes on to show that neurotic diseases, syphilis and defects of the cranial contents exist among them. You are familiar with the disputations connected with the matter of responsibility in mental disease, and I will not trouble you with even a résumé thereof, but will ask your consideration of the philosophical view that criminality is madness.

It is not so long ago in the World's history, that sickness of all kinds was regarded as a diabolical possession and among some primitive people attempts were made by harsh treatment of the patient to scourge away the evil. When enough advance in reason had been made the sick were no longer held responsible for bodily ailments, but insanity was not regarded as depending upon any of the diseases to which mankind was subject, in fact it was not considered as a symptom of bodily disease at all.

Finally, this concession was made, and mental disorders are in many countries classed as sickness for which the sufferer is not held to account, though in Illinois a jury still determines the extent to which a person is guilty of insanity; or, if we admit that the law recognizes insanity as a disease then a lay jury merely makes a diagnosis.

Magnan and other pathologists, Crother and other clinicians, have demonstrated that many forms of inebriety depend upon defective organization. Criminality and drunkenness being the product of structural faultiness it is as sensible to "punish" the sick as the malefactor.

In sickness, insanity and criminality *discipline* is absolutely necessary; the delirium typhoid patient is prevented from leaving his bed and the rheumatic from eating unwholesome food. In the better class of asylums the insane are promoted to better wards and more privileges as an inducement to cultivate self-restraint, and this identical principle is operative to-day in the Folsom (California) State prison where a graded system of fare is adopted for convicts according to their behavior.

That Society is as yet unwilling to identify crime with insanity, on the grounds of inexpediency, does not disprove the identity and is paralleled by the inability of our ancestors to accord irresponsibility in mental ailments.

Objections without number can readily be raised against a recognition of crime as insanity; one of the logical consequences of which would be the abolition of the penitentiary as a reformatory institution. In considering this aspect of the question I would deny that reformation of criminality was accomplished by such imprisonment, and claim that the convict

who had served his term had merely graduated as a criminal, with of course here and there exceptions, which are such *in spite* of the system, the tendency of which is to confirm and to harden the convict. The protection of the community, for the time being, that the incarceration affords, is obtainable through any method of sequestration and is no argument in favor of the brutalizing punishments resorted to.

Legal gentlemen may laugh at this Utopian fancy, but let me tell them that penologists and alienists (who are not politicians) affirm that a large percentage of convicts are demonstrably insane from the standpoint of the layman, else why should there be a "crank department" in every such prison? I have known congenitally insane wretches to be forwarded to asylums after having been several years in prison with the statement that the lunatic had become so from the effects of imprisonment. Paretic dements, who in the beginning of their mental breakdown often commit larcenies or outrages against decency are condemned as criminals and soon die in a convulsion or after a maniacal outbreak. I have heard the question "What difference does it make, since death is inevitable, whether the patient die in the penitentiary or asylum?" The same might be urged in all cases in favor of an abolition of asylums and a return to the whipping, ducking and starvation methods of treating lunatics in recent centuries. Besides, *ad hominem*, would it make no difference to your family that the truth had been recognized and you had been permitted to die as insane instead of as a convicted thief? The "insanity dodge" does not seem to have availed among poverty-stricken culprits when we can recall so many grossly insane patients converted into convicts. A pauper suffering from katatonia stabbed his wife in the most insanely brutal manner, exhibited all the peculiarities of that disease while in jail, but the political alienists and the jury forwarded him to the penitentiary where he was placed in the "crank department." A sixteen year old girl with hysterical insanity who attempted to poison her parents was also pronounced sane and sent to the same place; a paranoiac with *petit mal* who had shot two women for absurd reasons was given six years in the penitentiary. The illegality of this sentence appears in the nature of the offence if committed by a sane person justifying, under present laws, a life sentence, but the suspicion that he was not "well balanced" caused the term to be shortened. A life imprisonment in an insane asylum would have been more rational.

Where insanity is suspected in a criminal the European method of preceding trials by an expert commision examination saves a great expense to the State and avoids the farcicalities so common in our American courts in similar cases, but as our peculiar institutions would, in nine cases out of ten, foist ignorant politicians upon us as members of such a commission, scientific alienists are not inclined to enthusiastically favor a change from the present faulty methods of lunatic inquiry.

Many generations may come and go before the world can adjust itself to identify crime with insanity, but that eventually such a view will prevail appears to me to be inevitable as the outcome of progressive thought. When that time comes there will be no penitentiary, for the asylum will quarantine against all who cannot conform sufficiently to social requirements; there will, furthermore, be no practical politician, as we understand him to-day, for recognizing him as a member of the crime class his public treasury burglaries will be thwarted and the reason for his existence will cease.

Alienists are too busily engaged in trying to convince the lawyer and the public that there should be no distinction between medical and legal insanity to undertake greater tasks, and it is this constant endeavor of higher knowledge to adapt itself to the conceptions of the period that causes such a thing as medical jurisprudence to exist. It was formerly treason against God, king and common sense to deny witchcraft, all that could be done in defense was to prove the unfortunate not to be a witch. I am not so shallow as not to foresee that many considerations would arise under such an adjustment that would require a great revision of our statutes, but I believe the Code would be greatly shortened and that criminal lawyers would be few in number; the main ground for contention would be the fact of crime commission.

Polemics over accidental or designed acts would be abbreviated when the only object of the law would be to prevent a recurrence, and while Nature's failure to distinguish between a hand thrust deliberately or accidentally into the fire might not altogether be copied it could be thought of in disposing of the man who jokingly points an unloaded gun at another, for that species of imbecility is as deserving of regard as any other.

So much for the future; but as an evidence that enlightened views are beginning to prevail we may note that the Wisconsin Senate passed a bill to send convicted drunkards to insane asylums, in spite of the teachings of ecclesiasts that drunkenness is a crime and not a disease.

As however, in the present, responsibility is not to be discussed in court rooms from the philosophical side, it at least should be granted that the alienist is best able to consider the facts of insanity even from the legal and lay outlooks. At once, then, it should be known that insanity cannot be dealt with as one and indivisible any more than sickness in general. There are many kinds of insanity and a knowledge of their phenomena is requisite to an intelligent judgment. For example, take one of the circular or recurrent forms such as katatonia, where the patient may be melancholic, stupid, maniacal, and then apparently rational, alternately. Judge, jury and lawyers *cannot* pass upon such a case properly without a knowledge of these phases and as to whether the lunatic is or is not a katatoniac.

One with a head injury often becomes very intolerant of alcohol and upon occasion may commit some grave offense. These and multitudes of as well established facts should be duly held up to view.

There is such a malady as transitory frenzy, which may last hours or a less time and during which suicide

or murder may be accomplished. I reported one such case in which a poorly balanced female head, under large doses of some abortifacient, attempted to throw herself from a window and cut her arm arteries with scissors. Had the onslaught been made upon some other person she would have had great difficulty in proving her temporary insanity for it was of but brief duration.

Witness poor John McCullough, the actor, wandering about with his delusions of grandeur and nearly every other evidence of paretic dementia fully recognized as such by able alienists who were unwilling to advertise their judgment and suffer the abuse of medical ignorami, even though time would have sustained the verdict.

The German alienists more particularly have advanced psychiatry to a footing with many of the more exact provinces of medicine. This is no less a truth because the fact is not generally known and that practitioners are often found who, like Fordyce Barker, are capable of appearing as experts in toxicology, gynæcology, surgery, ophthalmology and psychiatry.

The olden dictum that the depths of one's attainments are inversely as their breadth, while needing some qualification, applies in such cases, for medicine has differentiated and developed beyond the possibility of any single person attaining proficiency in all. The shoemaker may as well attempt to dis cuss the relative merits of Jurgensen and Waterbury watches as for the medical specialist in one line to pass judgment upon another.

If some legislative provision were made for insane criminals and the criminal insane as was suggested by Dr. Dewey, of the Kankakee Asylum, judges and juries might see their way clear to a more rational disposition of such cases as popular condemnation impels them to pronounce "sane but illy balanced"—"not insane but a crank"—"responsible for his act but of a low grade intelligence."

Especially should medical men insist not only that physicians should be selected as superintendents of asylums but, if it is not asking too much, that such physicians should know something of insanity. Recently, in Chicago, lawyers were allowed to nominate candidates for judgeships from among themselves. Why would it not be as well to permit physicians to select the heads of medical institutions, instead of relegating this power to saloon keepers, gamblers and prize fighters, some of whom, at least, are indicted thieves and more are justifiably suspected to be.

At first glance it might seem advisable to compel asylum officials to keep full records of all cases admitted, and to have some more careful method for the receipt and discharge of lunatics, but as brains and scientific ability cannot be legislated into the heads of medical politicians the records kept by such a one would be valueless and the liberation of dangerous paretics can only be prevented by the asylum physician knowing a little about insanity, the recommendation that respectable alienists should be appointed to superintend asylums would cover the points better than the legislation named. The Illinois State Legislature has been appealed to with regard to enacting some suitable punishment for attendants who illy use, wound, or occasionally murder the insane, but time is taken up by fisticuffs among the honorable members and calcimining self investigations covering alleged steals.

Then as to the status of the expert in court: He is usually selected by one side instead of by the judge and theoretically is presumed to be unbiased. He is placed in a false position, for being the recipient of a fee from one side his allegiance would seem to be due to that side and were his testimony harmful thereto he would, with some show of justice, be considered as having betrayed his trust.

There seems to be but one honest position for him to assume: that of a partisan who may coach the lawyer who engages him. If he can conscientiously, in addition to this, go upon the stand as an expert his convictions should be freely expressed and the lawyer should take his chances with such testimony just as with that of any other witness whom he calls.

Ray's suggestions are good:

1. That the expert should be asked if he gave his entire time to the study and practice of one branch of medicine, and if that branch was psychiatry.

2. That the expert opinion should be rendered in writing which would cause legal trickery to be harmless.

These suggestions apply equally well to neurological cases which are mainly actions against corporations for spinal injuries wherein Ericson figures largely for the plaintiff against Page for the defendant. In a disorder that presents such a preponderance of subjective symptoms as spinal concussion, and in all other cases where simulation might be alleged as in paralysis, contractures, etc., the value of faradic and galvanic tests of muscles and nerves should be more fully appreciated, especially since with the milliampèremeter and Erb's electrical charts we have the means of graphically presenting the conditions ascertained in such a manner that the jury may readily comprehend.

THE USE OF THE CURETTE AND INTRA-UTERINE DOUCHE AFTER LABOR AT TERM.

Read before the Chicago Medical Society, September 19, 1887.

BY J. SUYDAM KNOX, M.D.,

OF CHICAGO, ILL.

I think it will pass unquestioned that the sole object of washing out the uterine cavity, or of using the curette within it, post-partum, is for antiseptic purposes. Septicæmia or putrid absorption is possible during the puerperium of every woman. If, therefore, these operations are perfectly harmless, they should be freely performed as a prophylactic measure, and should be heartily endorsed by obstetricians.

If, again, the uterine cavity be the common origin of the septic and inflammatory accidents of the lying-in, again should the curette and the intra-uterine douche be used at the first signals of such abnormal disturbance.

If, however, these operations be dangerous, requiring extreme care and precision; if, further, most of the inflammatory and many of the septic affections of the puerperium have not their origin in the womb; then the use of the intra-uterine douche and the curette should be discountenanced, except in the hands of the skilful, and in the presence of positive indications.

This brings us at once face to face with two questions, viz.:

1. To what extent, after labor, are douching and curetting the uterine cavity harmless?

2. What proportion of puerperal inflammations and septic fevers have their origin in the uterine cavity?

Let us consider these questions in order.

1. To what extent, after labor at term, are douching and curetting the uterine cavity harmless? At first sight it would seem almost useless to quote authorities in answer to this question. Scarce a writer on obstetrics, in describing these operations, but writes with precision and minuteness of detail, emphasizing caution and precaution. I have time to quote from but one or two.

Lusk[1] says: "The operation of cleansing the uterus should be conducted with the most scrupulous care. Intra-uterine injections should be resorted to with extreme circumspection. Among the accidents which have been referred to the use of injections, are convulsions, shock, and carbolic acid or corrosive sublimate poisoning; but the chief danger lies in the possibility of conveying the infectious material from the vagina to the previously normal uterus." Then quoting Carl Braun, of Vienna, he says[2]: "Braun von Fernwald, with his vast opportunities for judging obstetrical questions, writes in reference to this: 'We must protest against injections made by physicians into the uterine cavity—such meddlesomeness is more likely to do harm than good.'" "This," says Lusk, "corresponds with my own experience."

Charpentier[3] writes: "A certain number of accoucheurs in France, and eminent ones, are afraid of intra-uterine injections, and look upon them as more harmful than useful."

Although an earnest advocate for intra-uterine douches where "strictly indicated," Charpentier emphasizes this[4]: "Let it be understood, however, that intra-uterine douches are to be administered with care, and *always by the physician himself.*"

Hofmeier[5] administered intra-uterine douches after 260 cases of normal labor; 42 of these presented more or less serious symptoms. In another series of 240 cases of normal labor no intra-uterine douches were given; only 19 of these women presented any unusual symptoms. Paul Bar,[6] speaking of the dangers of these douches, says: "After the injection is given, we occasionally see some alarming symptoms develop; the woman becomes pale; she faints; soon she complains of severe pain in the hypogastric region; then she experiences the greatest anguish. These symptoms may be temporary. But sometimes they assume the greatest gravity, and death may supervene immediately or after a few hours."

The above quotations from writers of large obstetric experience, and practicing the operation under the most favorable circumstances, are sufficient to show that intra-uterine douches are by no means harmless.

I do not hesitate to acknowledge that many, possibly a majority of the obstetric teachers of to-day are advocates of intra-uterine douches, some of them, like Schultze, Schülein, and Grünewald advising them, as a prophylactic, after all labors. This, however, does not affect the conclusion that they are *not* harmless.

There is a vast difference between the conscientious care, exact methods, and skilled operations of Continental maternity obstetricians, and the practice of our average accoucheur. If only one of the gentlemen before quoted has found such douches occasionally harmful, then are they dangerous; yes, at times murderous, in the hands of the careless many. The most enthusiastic advocates of the intra uterine douche insist that it must be administered with the most scrupulous care. The external disinfection of the patient; the thorough disinfection of the operator; the aseptic injector passing through a thoroughly aseptic vagina; the exact temperature and force of the injection; the entire exclusion of atmospheric air from the uterine cavity; the free drainage—in fact all the details of the operation; not one of them must be omitted. Leave out the simplest of them and the whole method is vitiated. The arch loses its strength by the removal of a single stone.

How absurd even to expect this of the average practitioner, or average obstetric nurse. How vicious, unless positively indicated, and antiseptically practiced, to deliberately accept the risk of infecting the uterine cavity.

Since the use of the curette necessitates the subsequent use of the douche, the risks of the latter apply to it. In addition are the necessary admission of air into the womb; the creation of further wounds; the provocation of hæmorrhage; the shock of operation and the possible perforation of the uterine wall.

2. What proportion of puerperal inflammatory and septic fevers have their origin in the uterine cavity? Not what is the *cause*, but whence the *source* of these puerperal accidents?

The fact that a woman is parturient does not protect her against the inflammatory and zymotic diseases common to her sex or to mankind. Her puerperal condition may gravely modify the normal course of an invading sickness and cloud the prognosis, but it does not influence the origin. Parturition is no specific against malarial manifestations, nor contagious zymotic diseases, neither does it protect from acute inflammations of mucous and serous surfaces, nor traumatic inflammations of cellular tissue and gland organs. Supply approximates causes, and they all arise equally before, during, or after gestation. Such intercurrent maladies often retard

[1] Lusk. Science and Art of Midwifery. D. Appleton & Co., 1887.
[2] Loc. cit.
[3] Ency. Obstet. and Gyn. W. Wood & Co., 1887. Vol. iv, p. 368.
[4] Loc. cit., p. 373.
[5] Cent. f. Gyn., 1880.
[6] Bar. Princ. Antisep. Methods in Obstet. Practice. P. Blakiston & Co. Philadelphia. 1887, p. 140.

the convalescence of the lying-in woman, and can proceed to a fatal termination without the slightest evidence of sepsis. It is not necessary to quote authorities in defense of this. There is no dissent from it.

In this age, when nearly every puerpera having chill and rise of temperature is treated with the intra-uterine douche, according to Schultze's idea "that we must adopt some aggressive form of treatment, and treat each puerperal woman as if she already had puerperal fever," it seems to me necessary to protest against so pernicious a practice. Such a procedure in purely inflammatory puerperal accidents is not only thoroughly unreasonable, and a confession of lack of skill in differential diagnosis, but it is dangerous. There is the greatest risk of introducing septic and putrid material into a uterine cavity that is probably entirely aseptic.

Equally well recognized by obstetricians is the fact that a majority of the inoculations of parturients arise anterior to the uterine cavity. The practice in Continental maternity hospitals sufficiently proves this.

In the Prague Maternity, under Prof. Breisky,[7] labor is conducted antiseptically. When evidences of sepsis appear, antiseptic vaginal irrigations are practiced. They seldom have recourse to intra-uterine douches. These are always made by the physicians.

In Copenhagen Maternity,[8] under Prof. Shufeldt, intra-uterine douches are only used when there is positive evidence of putrescence in the uterine cavity. Otherwise vaginal antiseptic injections are administered. The methods of Tarnier[9] and Charpentier, of Paris, and Spaeth and C. Braun, of Vienna,[10] are practically the same. Vaginal injections are the sole post-partum antiseptic treatment, unless there are positive evidences of septic inoculation of the uterine cavity.

Garrigues,[11] in the Maternity Hospital in New York, discards both vaginal and intra uterine douches, and believing that septic infection post-partum originates at the orifice of the parturient canal, uses his occlusion bandage with remarkably good results.

Lusk,[12] in the last edition of his work on obstetrics, in summing up this subject, says: "Intra-uterine injections are not indicated by a simple rise of temperature. A very large proportion of the febrile attacks which occur in childbed run an absolutely favorable course. Unless the infection (and this is not the rule but the exception) proceeds from the uterine cavity, they are unnecessary."

If, then, the post-partum use of the intra-uterine douche and curette be not harmless in the hands of the most skilful, and is dangerous as used by the careless; and if, further, there are many inflammatory accidents of puerperæ that are not septic, and many septic accidents that do not arise within the womb, when shall we administer them? I would formulate the following rules:

1. Where there is positive evidence that there is putridity or septic infection of the uterine cavity, the douche is imperatively demanded.

2. Where the douche does not succeed in abolishing the fetor or septic symptoms, the curette should be cautiously and thoroughly used.

3. Where the womb has been thoroughly irrigated and made aseptic, the douche should be discontinued.

4. Where there is septic fever, with doubt as to its uterine origin, vaginal antiseptic douches should be first attempted. Only on their failure should intra-uterine douches be resorted to.

5. In purely localized inflammatory affections, with no evidence of sepsis, the intra-uterine douche is absolutely contraindicated.

6. The intra-uterine douche should never be used simply to lower temperature.

And as a corollary to the above should be added:

7. It should be considered a criminal offense to administer an intra-uterine douche without proper antiseptic precautions, or to intrust its administration to an unskilled assistant.

Lest this last be considered too harsh and arbitrary, I would explain that it is a slow outgrowth from observation of the practice.

There is a growing tendency, in this germ-crazed age, to charge every deviation from a normal lying-in to bacterial agency; which I believe to be wrong. There is also a growing tendency, on account of the brilliant results obtained in maternity hospitals, to apply the methods of such hospitals to private practice. I do not object to the methods, but I do strenuously object to this application. The fact is, the influences affecting the two classes of parturients are radically different. The best results obtained in maternities to-day, under strict antiseptic precautions, do not exceed those of ordinary private practice without special antisepsis. Besides, it is not possible to carry into private practice the routine of the hospital. Whenever the influences *are* similar, the same methods should be rigidly enforced.

Again, in the practice of these methods I earnestly and solemnly protest against the divorcement of the technique from the operation. The intra-uterine douche or the use of the curette is valuable, not so much because the injection is antiseptic, or the *débris* is removed, but because it is done antiseptically. Unless so done it is worse than useless.

This growing easy faith in the harmlessness of uterine irrigations administered carelessly, and often entrusted to unskilled and ignorant nurses, is to me appalling.

I would close this brief paper with two quotations which fully express my views. The first is from Egbert H. Grandin, M.D., of New York:[13] "There is one point in regard to the intra-uterine douche on which sufficient stress cannot be laid, and this is that it is useless, and is not indicated, except where the source of infection lies in the cavity of the uterus. Exudations around the uterus, whether of septic or traumatic origin, are not benefited, but may be, on

[7] Quoted by Bar.
[8] Quoted by Bar.
[9] Quoted by Bar.
[10] Quoted by Bar.
[11] Antiseptic Midwifery. Garrigues. 1886.
[12] Loc cit.
[13] Ency. Obstet. and Gyn. W. Wood & Co., 1887. Vol. iv, p. 378.

the contrary, intensified by manipulation of the uterus. Fœtor, rise of temperature, chill, may depend on a lesion of the vagina or cervix, as well as on infection from the uterus. We must first differentiate the source of the infection, as nearly as may be, and where in doubt, in the absence of evidence of cellulitis or of peritonitis, it is a good and a safe plan to give, with care, one thorough intra uterine douche."

The second is from the pen of Lusk:[14] "It cannot be too strongly insisted upon that, in a rightly conducted confinement, infection does not begin in the uterine cavity, and that the need of such injections is a confession of faulty procedure."

OPERATIONS FOR MASTOID DISEASE.

Read at the Thirty-Seventh Annual Meeting of the Illinois State Medical Society.

BY SETH S. BISHOP, M.D.,

CHICAGO; SURGEON TO THE ILLINOIS CHARITABLE EYE AND EAR INFIRMARY, TO THE ILLINOIS MASONIC ORPHANS' HOME, ETC.

The purpose of this paper is to increase your confidence in operations on the mastoid process. Some physicians, for whose attainments I hold the highest regard when matters of ordinary surgical experience are under consideration, have questioned the expedience of surgical interference in mastoid disease. Principles that are admitted to be unimpeachable in general practice, have been disputed when applied to the treatment of mastoid abscess and necrosis. No surgeon denies that free and early exit should be given to confined accumulations of pus, yet this correct surgical precept is not only neglected, but advised against by some of our excellent practitioners. Being fortunate enough to have had a very gratifying experience with several cases in which operations were imperative and successful, I desire to impress you, as I have been impressed, with the necessity, safety and success of these operative procedures.

A few words may be profitably devoted to the subject of

PREVENTION OF MASTOID PERIOSTITIS

and abscess. I have often dissipated an incipient inflammation of the periosteum by means of counter-irritation with cantharidal collodion or essential oil of mustard, applied generously over and below the mastoid process. I endeavor to produce as active irritation as possible without vesication, and for this purpose the mustard oil is superior, although its volatile quality renders it disagreeable to both patient and surgeon. I have had numerous cases in which these remedies were not applied until after pain, redness, swelling and tenderness were marked, and yet these irritants used once or twice a day for a few days caused the inflammation to subside, and saved patients from the agonies of mastoid abscesses. Leeches, poultices and rest, with antiphlogistic remedies, will frequently effect the same result. But let us suppose that the opportunity for these measures is past, and that the formation of pus is inevitable, or that fluctuation is already present, what is the best course to pursue? What, but the same that we adopt in similar conditions in other parts of the body? A free

INCISION

with a strong knife should be made clean down to the bone, and from a half-inch to an inch and a half long. The cut should extend over the most prominent portion of the swelled mastoid tissue, directed from below upward, parallel to the attachment of the auricle. Should no pus escape immediately it will likely do so in a few hours, and we shall have dispelled the exquisite pain by relieving the stretched nerves of their unnatural tension. Free bleeding will probably occur from the divided posterior auricular artery, but this only depletes the over-distended vessels—adds water to the fire, oil to the burn. A grateful sense of relief comes soon, and we may confidently expect all the symptoms to be ameliorated. If no caries be present the wound should be cleansed, and dressed with finely powdered boracic acid, absorbent cotton and antiseptic gauze bandage, with a drainage tube or tent in the lower end of the wound.

So far we have dealt with a periostitis, or an abscess, in the course of which the disease has not invaded the bone. Although such cases are the concomitants of suppurative otitis media they are quite amenable to the preventive and curative treatment outlined above, associated with treatment directed against the middle ear disease, so long as the integrity of the bone is not affected. Let us now pass to the consideration of necrosis and the operations for

OPENING THE MASTOID CELLS.

After Wilde's incision has been made, as described above, the surface of the bone should be thoroughly explored with a firm probe to discover any caries or a sinus which might exist. If there is no more serious condition than superficial caries, this should be dislodged with the chisel, gouge or curette, care being taken to preserve all the periosteum. When dead bone is to be removed it becomes necessary to make a secondary incision, extending backward, at right angles to the middle of Wilde's incision in order to get sufficient space for the use of bone instruments. When a sinus is found I make the two incisions meet directly in the sinus, dissect up the periosteum and over-lying tissues, and have the flaps retracted and held out of the way by assistants. If the opening is a small one it should be enlarged with a small drill sufficiently to afford free drainage and to remove all the diseased bone. I have found the openings effected by nature in some cases too large and irregular to admit the use of either drill or trephine. In such cases the chisel, gouge and curette are required. Occasionally one may find spiculæ of bone loosened which he can remove with the ordinary dressing forceps, with a little careful manipulation to detach it from its irregular surroundings. When there is quite a large area of bone denuded of its periosteum we may find, on pressing the finger upon it, that it gives, as though it were

[14] Loc. cit.

hung on one side by a stiff steel spring. In such a case the line of demarkation between the healthy and diseased tissue should be sought, and the division be effected by the delicate chisel and mallet. A trephine may be useful also for this purpose if one can find a firm place for its fixation shaft. In using the chisel one should be sure that it is sharp and properly shaped, and that the blows of the mallet are light, otherwise more bone than we wish to remove may be taken. It has happened to me in a case where the necrosis was very extensive that the whole lower portion of the process has given way under a dull chisel, carrying with it some healthy bone, and exposing the dura mater. The chisel was not properly tempered and beveled, and the cutting surface chipped during the operation. After all the superficial dead bone has been removed and the edges of the sinus rimmed out and made smooth by the conical drill, we may find the cellular tissue of the process diseased and filled with dark red, ugly looking granulations. The curette, adapted in size to the circumference and contour of the opening in the bone, should then be employed with the utmost caution to avoid injury to the dura mater, the lateral sinus, or the middle ear. Frequent stops should be made to examine the tissues we encroach upon and to determine when we reach sound parts. Small sponges used frequently will free the wound of blood so that we can make satisfactory examinations of our progress, and if the bleeding is considerable it is advisable to have an assistant syringe the cavity at every step with a warm solution of mercuric bichloride, 1–10,000, so that we shall make it impossible to remove tissues that should be left intact. In this way I have removed diseased bone until portions of the inner table were taken out, the dura mater exposed and the pulsations of the brain were visible, and yet have avoided harming the dura mater, as the subsequent progress of the case demonstrated.

In using the trephine or drill the instrument should be directed upward, forward and inward, as a rule; but the location of the sinus, if one be present, or the place selected for opening the bone, must help to determine the direction of the instrument. The pressure exerted on the drill or trephine should be very light, for fear that the outer layer may be unusually thin, and that the instrument may suddenly settle into the soft tissues beneath. The thickness of the outer layer will average from an eighth to a quarter of an inch. In children it is very thin; while in adults I have found it nearly a half inch thick.

The operation ought not to be ended without syringing the wound, cleaning out all the debris and examining the cavity minutely by the aid of strong illumination made brilliant by the concave mirror if necessary. It requires the closest scrutiny to prevent the overlooking of small particles of diseased and dead tissue. Should we not be successful in removing all of this, the erosion may extend and require a subsequent operation. But the necessity of a repeated operation does not perforce argue that all the necrosed bone was not taken at a previous operation. I have several times removed diseased bone from a mastoid process which had been operated on before by a competent surgeon. At each operation the most critical inspection, under brilliant artificial illumination, has satisfied all the surgeons present that no unhealthy tissue remained. But this occurred in an extremely unpromising patient of a strumous diathesis, upon whom I operated to prevent meningitis and cerebral abscess. Nearly the whole mastoid process crumbled away, and some time after the third operation I found the incus lying loose in the wound.

It is remarkable how rapidly a suppurative inflammation of the middle ear may involve the mastoid cells in caries, and how extensive the necrosis may become after a few weeks' duration. I have seen cases that were discharging pus from a sinus which had existed for three weeks only, and where the advent of the sinus was preceded by no more than four or six weeks of suppuration of the middle ear, if the statements of patients and friends were to be credited. Upon enlarging the opening I have had to scrape away unhealthy granulations and dead cells with the curette, until the mastoid process was literally converted into an empty cup, before all the products of disease were removed.

If my observations are correct, the rapidity of this destructive process is greater in children than in adults. It follows, then, that it is better to operate early, when the case requires it, to prevent extensive necrosis; and the vigor of youth renders the prognosis the more favorable.

It is a custom among some operators to leave the edges of the cut gaping, and to fill the cavity with lint, that it may heal from the bottom. I have preferred syringing the parts with the bichloride solution, dusting them freely with iodoform, inserting a drainage tube at the bottom of the wound, sewing it up and dressing it with absorbent cotton and a bandage of antiseptic gauze. With this treatment there is but little subsequent discharge. The case is seen daily and dressed as often as cleanliness and antisepsis require.

I have entered thus minutely into a description of this operation for the reason that it is rarely performed except by specialists, and although I have enjoyed the ample opportunities offered by the surgical clinics of New York, I never had the advantage of witnessing the operation until I first performed it. Yet I must say that the results in the first case were not surpassed by those in any other. The patient was a young man, 18 years old, with a discharging mastoid sinus accompanying a chronic suppuration of the middle ear. The caries was extensive and the hearing much impaired. I removed all the dead bone without sacrificing any of the periosteum, and followed a course of treatment adapted to the condition of the middle ear, with the result that in fifty-six days the wound had completely filled in and healed with hard cicatricial tissue, and the tympanic disease was cured. I met the patient on the street a short time since and he stated that he had experienced no further trouble, and that his hearing was as good as ever it was before the operation.

For the sake of brevity I will give but a skeleton

sketch of one or two other cases. An interesting one is a boy 6 years old, who had scarlet fever, followed in two weeks by an acute suppurative inflammation of both middle ears. Two months later, when I first saw him, a mastoid abscess had developed, necessitating Wilde's incision. Exploration with the probe revealed a sinus and softened, roughened bone. I was unable to obtain his parents' consent to an operation until three months later, when I operated at the Chicago Medical College. In the meantime I had succeeded in curing the suppurative process of the middle ears and had kept the sinus cleansed with solutions containing boracic acid, carbolic acid, mercuric bichloride, iodoform, the hydrogen peroxide, etc. Anæmia and malnutrition demanded tonics and alteratives, whereupon he grew fat and plethoric. At the operation it was found that a large part of the external layer of the process was denuded of periosteum, the bone was black and movable, and the cells were filled with very dark, unhealthy-looking granulations and pus. After removing all the diseased tissue the wound was dressed antiseptically, and in eighteen days had completely healed and the patient was well. Some weeks later, while the boy was at play with his companions, he received a blow over the cicatrix, which was followed by an acute inflammation and suppuration. A small spicula of healthy-looking bone, which the blow might have detached, protruded from the wound and was picked out. The wound then healed and opened several times, and when I last saw the patient there was a pin-hole opening and an oozing of a drop of sero-purulent discharge in the course of the twenty-four hours. This patient has made a complete recovery.

The only other case in which the results were not completely curative and satisfactory, was the one already mentioned as a bad case of scrofula. It was a woman in whom all the lymphatic glands were enlarged; she was emaciated, anæmic, without appetite or strength, and required the most invigorating and supportive treatment both before and after the operation. I should not have felt justified in operating were it not for the fact that the patient would likely have died of exhaustion, pyæmia or cerebral abscess, if the extensive necrosed tissue were not removed and the suppuration stopped. She had been operated on five months previously, but the wound had never closed or ceased to suppurate. When she left the hospital the wound had not entirely closed, and there was a slight discharge, but no dead bone. She was permitted to go to the country on condition that she should return for treatment three times a week until cured. I never heard from her again.

These two are the only cases in which the cure might not be said to have been complete before they passed from under my observation, and during the past year I have had seven patients under my care in which the operation was imperative. Two of these cases were operated on by my colleague at the Illinois Charitable Eye and Ear Infirmary, Dr. F. C. Schaefer.

The arguments in favor of the operation may be summarized as follows: Three-fourths of the cases were completely cured. The remainder were benefited. None were worse for the operation. Nature's method of opening abscesses and casting off dead bone is slow and uncertain. The presence of confined pus threatens necrosis, and the presence of necrosis and pus threatens meningitis, cerebral abscess, pyæmia and death.

719 W. Adams St.

THE CHOICE OF GENERAL ANÆSTHETICS IN SURGERY AND OBSTETRICS.

Abstract of a Paper read before the Medical Society of Virginia, October 19, 1887.

BY HUNTER McGUIRE, M.D.,
OF RICHMOND, VA.

Beginning with a denial of the common statement that the use of any anæsthetic lessens the success of operative surgery, Dr. McGuire mentioned that chloroform is the popular anæsthetic used in France (except in Lyons), Germany (except in Vienna), and in Italy. In Great Britain, mixtures of ether and chloroform are principally used. In China, chloroform is chiefly used. In the United States, ether is the popular agent throughout the Northern and Northwestern States, while chloroform is the generally adopted anæsthetic of the Southern and Southwestern States. Thus it will be seen that throughout the civilized world, chloroform is much more generally used than ether. Combining the obstetrical cases in which anæsthetics are used with the surgical, it may be safely estimated that chloroform is used twenty times as often as ether as the anæsthetic—the two agents to which he restricted his paper. He predicted that when a full analysis of all the facts is finally made, in certain cases it will be determined that ether should be given, and chloroform in certain other cases—thus establishing the special value of both. In general terms, in the feeble or anæmic, or in those prostrated by shock or loss of blood, he prefers ether; but when there is cardiac, renal or pulmonary trouble, chloroform is preferable. Up to the present time between 400 and 500 deaths from chloroform have been reported, and about 100 deaths from ether; but he was unable to say what the ratio of deaths by either agent is to the total number of administrations. Sphygmographic tracings during chloroform anæsthesia show depression of the circulation; this is only occasional, and then not so marked when ether is given. Hence cardiac paralysis is more likely to follow the use of chloroform. But experience proves that when chloroform is withdrawn, and consciousness returns, the patient is safe. But this is not the case after ether is withdrawn. Even acute nephritis or pneumonia occurs sometimes as the result of the use of ether. In short, in diseases of the kidneys or lungs ether is more dangerous. But both may kill—especially chloroform, by using a too concentrated vapor during the period of muscular excitement, by paralysis of the respiratory nervous centres.

In selecting an anæsthetic, Dr. McGuire is somewhat governed by the character of the assistant who is to administer it. In inexperienced hands, ether is the safer. To give chloroform requires one who

knows, and will attend to his business alone. One accustomed to give ether is not usually the one to select to give chloroform. To ask a patient to take long, deep or rapid inhalations of chloroform vapor is dangerous. The greatest danger from this agent is in the early stage of its administration, when by a too concentrated vapor or its too rapid use, the heart centres may be surprised and overwhelmed. When using chloroform, it is safer to let the patient's head be turned to one side, so as not to let the concentrated vapor—being four times heavier than air—exclude the atmospheric air. Begin with a small quantity, allow a plenty of fresh air and gradually accustom the patient to the vapor. Never give chloroform in a hurry.

The giving of alcohol as a heart stimulant just before giving chloroform is open to serious objections. In the first place, who knows what the stimulant dose is in individual cases? In the next place, alcohol increases the duration and stage of excitement, and makes nausea, etc., more likely to occur. We all agree that those addicted to the free use of liquor are bad subjects for anæsthetics.

The speaker mentioned a recent publication by an eminent New York surgeon, advocating the giving of a very small dose of chloroform in concentrated vapor, on the ground that if alarming symptoms set in, this amount could be speedily pumped out of the lungs by artificial respiration. This is dangerous doctrine to teach. In the only fatal case by chloroform coming under his observation, the heart stopped *suddenly*. The heart did not previously flutter, grow weak nor intermit, but abruptly ceased. It was like the syncope of concussion of the brain; the contractile power of the heart was annihilated. We may remove by artificial respiration in such a case all of the vapor; but we cannot in this way remove the impression made on the nerve centres which stopped that heart's action.

Although frequently taught, we are apt to forget that we should never operate during partial anæsthesia. Many deaths from chloroform are due to not heeding this advice that comes of experience. Fatal syncope may come on from the consciousness that the painful operation is yet to follow; or if intellectual consciousness is just lost, there seems to be left, so to speak, a consciousness in the nerve centres of the heart and lungs, and the impression of pain on them is fatal. Ether is safe when an operation is to be performed under partial unconsciousness. In operations in which blood or other fluids may escape into the windpipe, chloroform is the safer. Dr. McGuire does not think he ever saw the irritability of the larynx or trachea entirely lost in chloroform anæsthesia, but he has seen it in ether anæsthesia. Possibly the cold vapor of the other may in a measure account for this loss of reflex excitability in the throat.

In organic heart diseases, he has never had occasion to regret the choice of chloroform; but ether is preferable in a nervously weak heart, as also in cases of weakness from fatty degeneration, or loss of blood, or great anæmia from other causes, etc. In such cases any anæsthetic is hazardous, but ether is safer.

Of all the elements of danger from chloroform, fear on the part of the patient, he believes to be the most important and the most frequent. The heart becomes nervously weak. If a calm, confident manner on the part of the administrator does not allay this fear, give hypodermically a quarter of a grain of morphia sulphate, with a one-hundredth of a grain of atropia sulphate, and wait fifteen minutes or so for the physiological results before giving the anæsthetic. Emotional excitement greatly increases the chances of paralysis of the nerve centres presiding over the circulation. Morphia obtunds this sensibility and also acts as a cardiac stimulant, and atropia is probably a more powerful stimulant. That emotional excitement is an important element of danger he believes all administrators will admit.

Children take chloroform well and safely. They are not afraid of being killed by it. Nussbaum has seen 40,000 administrations of chloroform in military life without an accident. Dr. McGuire has seen, as Medical Director of Stonewall Jackson's Confederate Army Corps, 28,000 chloroform administrations without causing a death. Neither the age, sex, health, etc., of the soldiers could account for this. The wounded soldiers dread the hazard of chloroform very little. It is also significant that chloroform has been given to hundreds of thousands of women in labor, with but one fatal case, so far as he has learned; and in this instance it is by no means certain that death was due to the anæsthetic. Even when surgical operations have been required in obstetrical cases, no death has followed the use of chloroform. The recumbent position does not explain all this exemption, nor do the pains of labor, for we have pain from the surgeon's knife, etc. The element of success in all such cases, Dr. McGuire believes, to be the want of dread of chloroform.

Dr. McGuire deplores the partisan debates which have occurred on this subject of the choice of anæsthetics. In the last text-book on surgery issued this year, is the following: "In general there is no comparison between these agents; ether is so much safer than chloroform that the latter is fast disappearing in practice. The estimated death-rate after ether is 1 in 20,000; in chloroform, 1 in 3000." Such statements are the outcome of prejudiced brains, and are absolutely unwarranted by any facts or figures known to the profession.

COTTON GRAFTING.

BY M. PERL, M.D.,
OF HOUSTON, TEXAS.

Absorbent cotton is far preferable to sponge for grafting purposes, as it is always ready and at hand, requiring no preparation for its use; while the preparation of the sponge is a tedious process, and it must be kept in air-tight vessels immersed in an antiseptic solution. The following case will illustrate the *modus operandi:*

Eliza Roy, female, 18 years old, was treated by me from October 18 to November 12, 1886, for cerebro-spinal meningitis. She made a good recovery, with the exception of an indolent ulcer three

by five inches and one-half inch deep, the edges callous and turned under, resulting from a severe burn, on the lower part of the right leg, caused by the application of a hot iron to her feet, one night, while in a semi-comatose state, during the acme of the fever. The burned place was not noticed until she complained of it some fifteen days later, when my attention was drawn to it.

From that time on till April 15, I used all possible topical applications, gave tonics and prescribed a generous diet, with wine, but all to no purpose. I then thought of sponge-grafting, but, having none prepared, concluded to try absorbent cotton in its place. The day previous I had applied a thick coating of cantharid. collodion to the ulcer, which caused the surface and edges of the same to be slightly inflamed. This seemed to me the best time to apply the graft. A piece of absorbent cotton, the exact size and thickness of the ulcer, was saturated with a solution of corrosive sublimate 2:1000, the surplus liquid was expressed and the cotton smoothly adapted to the surface of the ulcer and held in its place by strips of adhesive plaster, over which a layer of borated cotton was spread. This was covered with antiseptic gauze and the whole surface was then closed with strips of rubber plaster, making as tight a covering as possible.

April 17.—The discharge being moderate, the bandage was not disturbed.

April 19.—Plaster, gauze and borated cotton were removed, and adhering puss was removed by a spray of corrosive sublimate of above strength; the graft adhered firmly to the surface of the ulcer, leaving only a small space between the edges of the cotton and the ulcer, to which a solution of nitrate of silver, 1:30, was applied, and the bandage adjusted as before.

April 21.—After removing the bandage the cotton graft had a pinkish color, was raised slightly, adhered firmly, and the space between the edges was much smaller. The same dressing was applied.

April 23.—The graft filled the whole space, adhered firmly, and was of a uniform pink color; the edges of the ulcer were flat and extended over a small portion of the graft; same dressing.

From that day on the ulcer decreased in size at each dressing, and two weeks later was healed over entirely.

On examining the pus with a lens, small particles of cotton fibre could be seen in it, showing that the cotton graft not only stimulates granulation, but also acts as a support to it, and, after serving its purpose, is carried away by the pus.

UTERINE FIBROMA; WITH REPORT OF CASE.

Read before the Section on Obstetrics and Gynecology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY J. H. VAN EMAN, M.D.,

PROFESSOR OF CLINICAL MEDICINE, IN THE KANSAS CITY MEDICAL COLLEGE.

The subject of fibroid tumors, of the uterus, having been treated of *in extenso* in numerous classical works and monographs, it is not necessary for me, in this paper, to enter either into the etiology, pathology, or diagnosis. In the line of treatment I shall say nothing of that by drugs; only speaking of one plan of treatment, viz., removal of both ovaries for the purpose of arresting the growth of the tumors.

Our management of cases being largly the result of the accumulated experience of physicians past and present, I shall omit all theory, and simply attempt to add my mite to the general sum of our knowledge on the subject. In order to accomplish this purpose, I have the honor to report the following case:

Mrs. M. H., 34 years old; married sixteen years; never pregnant; *has had poor health for twelve years.* For seven years has had almost constant sanguineous discharge from the uterus; during the menstrual periods being very profuse. In the last two years her physician has five times removed by means of the serrated spoon, a mass of fibroid tissue from within the uterus almost as large as a small goose egg; the growth persistently returning within three or four months after its removal.

October 19, 1886. *Examination* —Patient a medium sized woman. General condition fair. Uterus in position in the median line. Length of canal a little more than four inches. Fundus above the superior strait. From the os, a reddish tumor projected fully one inch. Vaginal discharge, bloody and offensive. In the left inguinal region, a slightly mobile mass larger than a hen's egg was readily distinguished through the abdominal wall. After a thorough explanation of the probable and possible results, she consented to a laparotomy, which was made on October 20, at the patient's home, a little two roomed box-house on the open prairie. The tumor on the left side proved to be an ovarian cyst. Uterus very much enlarged, and showed on its surface, at least two sub peritoneal fibroids. Right ovary healthy. Two small par-ovarian cysts on that side. Ovaries and Fallopian tubes removed on both sides; pedicles dropped, and incision closed.

Without going into tedious details, the history, in brief, is, that the highest pulse and temperature occurred at the end of the first 36 hours, viz., pulse 108, temperature 102°, dropping by the end of the second day to 95° and 100°. From this time to the fifth day, when the sutures were removed, the pulse ranged from 85 to 90, and the temperature from 99° to 100°. The convalescence went on with no complication worthy of mention.

The uterine hæmorrhage continued with varying severity, and with increased putridity, until the middle of January, 1887, when after 24 hours of *severe* labor, a large stinking fleshy mass was expelled from the uterus.

The further progress of the case I will give by quoting from a letter received from the patient a few weeks since:

"I have not menstruated for about two months. I was not *very* bad when I menstruated the last time. I weigh more than I ever did in my life. I appreciate good health, and haven't language to express my feelings."

MEDICAL PROGRESS.

PROPOSED CHEMICAL LUNG TEST.—DR. ZALESKI, of the Dorpat Physiological Institute, has published in the *Vrach* (No. 32) an account of some researches he has been making with the object of introducing a new lung test, which may be trusted to give satisfactory results in cases where the hydrostatic test is inapplicable or of doubtful value. He suggests that, as at the moment of birth there is not only an influx of air into the lungs, but a very marked increase in the blood circulating through them, and as blood contains in a tolerably definite proportion, the quantity of iron found in the lungs should furnish a clue to the question as to whether the child had breathed or not. He examined the lungs of four stillborn children and of three children born alive; also those of a healthy man who had been killed by an accident. Having of course taken care that the lungs had not been subjected to any previous section or manipulation, he tied the roots and cut off the bronchi. They were then immersed in distilled water for the hydrostatic test, and, after being dried with filtering paper, they were weighed in a platinum dish, and sections were made and carefully examined. After this they were dried in a hot-air chamber at from 115° to 120° C. until they ceased to lose weight. Soda was added to the dried lung substance, also water, and the whole was dried in a water bath. The mass was then ignited in a Bunsen's burner, treated with water, and thrown on a filter, which gave no ash. The whole was then again ignited. Here, all the iron was, of course, not in the filtrate. It was then heated with strong hydrochloric acid in a water bath. After the hydrochloric acid had evaporated, the residue was treated with sulphuric acid, reduced by zinc, and the iron estimated by a solution of permanganate. The result of the ob servations showed that the iron contained in the lungs of children that had breathed was always considerably more in proportion to their weight than in the lungs of stillborn children. The mean percentage of iron (Fe) in the lungs of the stillborn was 0.0110 of the weight of the fresh lung, and 0.0828 of that of the dried lung; whereas the mean percentage of iron in the lungs of the children who had been born alive was 0.0188 of the weight of the fresh lung, and 0.1182 of that of the dried lung. The iron in the case of the adult was still more than in that of the infants, the percentages being 0.0217 and 0.1266 of the fresh and dried lung substance respectively. In one case in which the child had lived for five days part of the left lung was found diseased, there being evidences of septic pleuritis and pneumonia. Here the diseased portion of the lung was separately examined, and found to contain a percentage of 0.0192 of iron in the fresh state, and of 0.1197 in the dry state, so that it would appear that the "iron lung test" holds good even for diseased lungs. The author has not made observations in cases where there has been profuse hæmorrhage from the cord, nor in those where putrefaction has commenced, but he thinks it probable that the test would answer here as well as when the lungs have been immersed in spirit. Of course, artificial inflation after death would not vitiate the test, as was indeed proved by one of the cases where Schultze's method of inflation was adopted five hours after stillbirth. Dr. Zaleski's "iron lung test" is evidently of too complicated a nature to be carried out by the ordinary practitioner, but in doubtful cases it would be quite practicable to preserve the lungs and send them to an expert, just as the stomach and other viscera are sent in poisoning cases. Before, however, any real value can attach to evidence deduced from it, a large number of experiments must be made by different observers, and their results collated.—*Lancet*, Oct. 15, 1887.

ANTIFEBRIN IN TYPHOID FEVER.—J. SOLIS-COHEN says: The alleged superiority of antifebrin over antipyrin in reducing excessive temperature without injury, led me to employ it during my present term of service in the German Hospital. The few attempts made to reduce high temperature in enteric fever present it as a much more dangerous agent than I have found antipyrin to be in a very extensive experience with that agent. So powerful an agent has antifebrin proved in the few cases in which I have used it that, as will be seen, 3 grains, or even 1, will effect very decided results on temperature. The inference is that small doses should be prescribed, say 3 grains, and that the patient should be visited at the end of an hour and examined as to the reduction of temperature before a second dose is administered; similar precautions being taken as to ordering a third dose; and that when the influence is seen to be marked, subsequent doses should not exceed 1 grain. The dose usually recommended has been 8 grains. This has been far too large in my hands.

Temperature records are appended, illustrating the effect of antifebrin, and showing a remarkable and rapid return of high temperature after initial reduction, with subsequent reduction, and rebound next day without further administration of the drug.

I append notes of the effects of antifebrin, manufactured by Merck, on cases of enteric fever:

Case 1.—Boy, æt. 17. Ninth day of disease, temp. 103.6°; 7 grains antifebrin given and repeated in one hour. Effect: first day of antifebrin, 6 P.M., temp. 103.2°; 8 P.M., 98°; 9 P.M., 96.4° 12 midnight, 97°. Second day, 4 A.M., 102.6°; 6 A.M., 103°; 8 A.M., 103°; 9 P.M., 99°; 10 P.M., 97.4°. Third day, 2 A.M., 102.2°; 7 A.M., 102.8°; 7 P.M., 104.8°, 5 grains antifebrin given; 8 P.M., 101.2°; 10 P.M., 99°, 12 midnight, 101.6°. Fourth day, 4 A.M., 104.2°; 8 A.M., 102.8°; 7 P.M., 103.8, 3 grains antifebrin given; 10 P.M., 98°; 12 midnight, 98.4°. Fifth day, 4 A.M., 104.8°; 7 A.M., 101.2°. Orders to discontinue antifebrin and resume routine treatment of the ward.

Case 2.—Married woman, æt 22. Fourth day of disease, evening temp. 100.4°; fifth day, first day of antifebrin, 7 P.M., temp. 103°, 3 grains of antifebrin given; 8 P.M., 98°; 10 P.M., 96°. Second day, 2 A.M., 98°; 4 A.M., 95°; 6 A.M., 98°; 8 A.M., 102°; 7 P.M., 99°. Third day, 8 A.M., 96.6°; 8 P.M., 103.8°, 1 grain antifebrin given; 9 P.M., 99°; 12 midnight,

98°. Fourth day, 4 A.M., 99°; 7 A.M., 103.° 5 P.M., 103°. Fifth day, 6 A.M., 98°; 5 P.M., 100°.

Case 3.—Boy, æt. 19. Temp. 5 P.M., 103°, 5 grains antifebrin given; 8 P.M., 101.4°; 9 P.M., 100°; 10 P.M., 97.6°. Second day, 2 A.M., 99.2°; 7 A.M., 99.8° 7 P.M., 102.8°. Third day, 7 A.M., 100°; 5 P.M., 102.6°.

Case 4.—This was a case of so-called recurrent typhoid, reëntering the hospital; 7 P.M., 104.8°, 3 grains antifebrin given; 10 P.M., 100.2°; 12 midnight, 103.2. Second day, 4 A.M., 102°; 7 A.M., 103.8°; 5 P.M., 103.6°.

Case 5.—Temp. 8 P.M., 104.2°; 1 grain of antifebrin given; 10 P.M., 104°; 12 midnight, 104°, 2 grains antifebrin given; 2 A.M., 102.8°; 8 A.M., 102.8°; 5 P.M., 102°.—*Medical News*, October 8, 1887.

Chloride of Ammonium in Hepatic Disease.—Surgeon-General W. Stewart says: The following is a summary of the auxiliary treatment, diet, and management of congestion of the liver, and mode of administering the ammonium chloride:

Bearing in mind what has been said of the therapeutic effects of the drug in hyperæmia of the liver, and the indications to be drawn from the symptoms and pathology of the disease, the first thing to be done is to put the patient to bed, there to remain, in acute cases, during the whole course of the disease; in short, till the congestion, pain, and general and local distress and uneasiness shall have subsided, and that the patient may have no occasion to quit his bed, a bed-pan and urinal should always be at hand, as well as a trusty attendant to minister to his wants. By the recumbent position and the avoidance of all sudden and violent movements, mechanical rest and support are given to the enlarged, weighty, and oppressed or painful organ. The horizontal position, too, facilitates the auto-transfusion of the blood from the portal system, through the hepatic capillaries, into the general circulation, under the influence of our special remedy—a process which will be better understood now that the reader is in possession of the details of the local signs expressive of the effects produced by it: the excitation of the muscles of the intestinal canal to increased peristalsis, and those of the abdomen and thorax surrounding the liver to tonic contractions, by which muscular pressure is brought to bear on the radicals of the portal vein, and on the liver and gall-bladder, which not only hastens forward the entire portal stream, but may squeeze out of the liver some of the superfluous blood as well as free it and the gall-bladder from retained bile. By the increase of the functional activity of the liver, as well as the increased flow of blood to the skin, as a further result of its action, a *vis a fronte* is brought into play in aid of the *vis a tergo* above described, by which the equilibrium of the entire circulation is speedily restored. The free perspiration induced by the drug is also promoted and chills avoided by the rest and warmth of bed. I have shown elsewhere that it is to this latter stage of its operation that much of its value is due—the free diaphoresis favors sleep, while the nervous system generally is exhilarated and soothed, and the patient almost entirely relieved from all distressing symptoms.

It is equally important that the congested (or it may be, inflamed) liver should enjoy, as far as possible, physiological rest. To this end, on no account must solid food be given to the patient, and wine, beer, or other alcoholic stimulants must be strictly prohibited. The diet must be of the least irritating character, and only small quantities of milk, beef-tea, or farinaceous articles should be taken at a time. Barley water may be taken freely as a drink. If there be diarrhœa, the patient passing frequent loose bilious or dark-colored motions, a pill composed of two grains of mercury and three grains of Dover's powders, repeated every two hours till four or five have been taken, will be found the most effectual means of checking it without the risk of setting up gastro-intestinal irritation. Looseness of the bowels, however, does not contra-indicate the use of the chloride of ammonium—indeed, it is in itself the best remedy in cases of diarrhœa associated with hepatic congestion. The only condition which contra-indicates the immediate use of the drug in acute cases is the existence of a combined hot and dry state of the skin with pyrexia. Under such circumstances its use should be preceded by a few small and frequently repeated doses of acetate of ammonia, till the skin is rendered moist and perspirable. Pyrexia being absent—or, if present, the skin being soft and perspirable,—the chloride should be at once commenced and persistently administered in doses of twenty grains twice or thrice daily, with strict attention to the rules above laid down as to diet, rest, etc., till it no longer produces sensible effects, or till all local uneasiness, hepatic pain, and tenderness have subsided. Fomentations or hot bran-bags applied to the seat of pain in the side will be of use in aiding determination to the skin generally, as well as by their local soothing effects.—*Lancet*, Oct. 22, 1887.

Treatment of Diphtheria.—Mr. E. Stanley Smith says: Recently published memoranda suggest the following notes: Gargling in diphtheria, as in all acutely inflamed conditions of the throat, is surely to be avoided if possible. Physiological rest for inflamed parts is usually regarded as a cardinal point in therapeutics; the act of gargling involves violent exertion of the muscular apparatus of the fauces and palate; the routine prescription of a gargle frequently causes patients great suffering, and may, I believe, do absolute harm. There are few, if any cases in which all the benefits of topical application are not obtainable by either painting, inhaling, or spray.

There is nothing new or original in my ordinary treatment of diphtheria; but as it has been very successful, I may be excused for describing it. Upon first seeing a case I order salicylic acid, 10 to 20 grains, suspended by means of mucilage in ½ ounce or an ounce of water, to be taken every two to four hours; if there is much pain, I combine 5 to 10 minims of succus belladonnæ with each dose. In severe cases I give also a mixture of perchloride of iron and quinine, usually one dose after every two of salicylic acid. The acid has answered better than salicylate of soda, especially because, being suspended in mu-

cilage, it adheres to the inflamed surface as it is swallowed, and in mild cases serves all the requirements of a topical application; there is often a little vomiting after the first dose or two, but that soon passes off. In all cases, except the mildest, one of the following applications has always served me well, namely: 1. Inhalation of eucalyptus oil, 10 drops to ½ pint of hot water, inhaled for five minutes every hour or two. 2. Spray of sulphurous acid, diluted with about twice its bulk of water; the acid should be freshly prepared, as evidenced by its pungency. 3. Spray of chlorinated soda solution, 1 part of the *B. P.* solution, with 3 or 4 of water.

Whichever spray is used should be applied most assiduously, as often as every hour at first, and it is essential that its administration should be supervised by a thoroughly skilled person; in cases where the upper part of the fauces or the nares are involved the spray should be separately applied to both throat and nostrils.

With young or intractable children, inhaling may be managed by means of a bronchitis kettle, and spraying by a large spray-producer—a steam spray answers best—placed at a sufficient distance to ensure its saturating the child's immediate atmosphere.

The remarkable restorative powers of Warburg's tincture were well shown in one case of severe nasal diphtheria, in a child about 4 years old. The acute inflammatory condition had subsided, there was not much membrane left, the temperature had dropped, the heart's power was decidedly flagging; in fact, the child appeared to be dying from blood-poisoning and exhaustion. He was given 10 drops of Warburg's tincture every two hours. He soon began to mend, and, after about six doses, rallied so much as to be practically out of danger.

Finally, I think that diphtheria, perhaps more than any other acute disease, calls for free alcoholic stimulation, and the most nutritious possible diet from the very first.—*British Med. Journal*, October 22, 1887.

SURGICAL TUBERCULOSIS. — *Tuberculosis of the Genito-urinary System* is the third division of Volkmann's article (see the two preceding numbers of THE JOURNAL).

13. Tuberculosis of the *testicle* is prevalent in younger and more mature age, but is found even in very advanced age. There is, however, in old people also, a simple, suppurating chronic orchitis and epididymitis that is to be distinguished from the tuberculous form. After tuberculous disease of one testicle the other is often attacked later. But even in the gravest cases, in which the epididymis has already undergone cheesy degeneration and been destroyed, the testicle itself is penetrated by densely packed miliary tubercles, and after removal of the testicle the patients not infrequently remain perfectly healthy for many years, and do not get tuberculous foci in the lungs or other organs. It is therefore desirable, particularly in younger persons, to castrate as early as possible, and before the cord is diseased and the process finds its way to the prostate and bladder, not losing time in making partial resections, scraping, and cauterizing. Such conservative and expectant methods are rather to be recommended in the more benign cases of older people.

The *secondary affection of the spermatic cord* is manifested partly as an even thickening, and partly in the form of separate wheat-grain-shaped swellings in the course of the vas deferens.

14 *Tuberculosis of the bladder, ureters and kidneys* is characterized as one of the most typical and grave of tuberculous affections. Even in cases in which the process was localized in the bladder it is probable that cure has not been observed. The demonstration of tubercle bacilli in the urine will make an earlier and more certain diagnosis possible. Whether, in tuberculosis of the pelvis of the kidney, operative interference, nephrotomy and nephrectomy, will be of real value to the patients, has yet to be decided.

15. In regard to *tuberculosis of the vagina and uterus* I have not sufficient experience. Such cases will more probably come into the hands of gynecologists.

16. *Tuberculosis of the mamma* is exceedingly rare; the clinical diagnosis is probably possible only in the later stages. The treatment must be amputation, and cleaning out of the axilla, since the lymph channels in the axilla are generally affected early. It is important to know that chronic indurated (not suppurating) mastitis sometimes causes swelling of the axillary lymphatics, that later become tuberculous and grow to cheesy gland convolutes as large as the fist, without the mammary gland itself having become tuberculous.—*Langenbeck's Archiv*, Bd. xxxiii, Hft. 1.

SUTURE OF THE BLADDER.—The *Deutsche Medizinal-Zeitung* summarizes a recent article by DR. A. BRENNER, an assistant at Billroth's clinic, published in the *Archiv für Chirurgie*, by which it appears that the author appreciates the force of Guyon's remark that the bladder should be sutured hermetically or not at all. In the method that he suggests, which as yet he has carried out only on the cadaver and in the case of dogs, two threads are carried around the wound, at the distance of an inch or less from it, one running in the submucous tissue, and the other in the muscular coat, care being taken that neither shall involve the mucous membrane. Both are then tightened and securely tied. The result of this is to form a rosette like pouch, which slightly alters the shape of the bladder, but the wound is made water-tight and air-tight.—*N. Y. Med. Journal*, Oct. 22, 1887.

PHTHALATE OF MORPHIA, as compared with other salts of this drug, BOMBELON claims to be highly serviceable. It is soluble in 5 parts of water, and causes no irritation when injected subcutaneously. It is obtained by evaporation and scaling, not by crystallization, and care is necessary in its preparation.

COUMARIN AND IODOFORM, says A. LANGLEBART, is a combination in which the odor of iodoform is disguised and its antiseptic properties increased. He used about 1 part of coumarin to 5 parts of iodoform.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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THE TREATMENT OF FRACTURES OF THE OLECRANON.

The cure of fractures of the olecranon, as is well known, is almost always brought about by a fibrous callus, more or less long and resistant, which, in the greater number of cases, restricts the movements of the forearm to a marked degree, and the functional result is often bad. The cause lies in the difficulty in making and maintaining complete coaptation of the bony fragments. The old surgeons, with the idea that anchylosis of the elbow generally takes place, placed the forearm in a position of semi-flexion. In this position the separation of the fragments is considerable, and consolidation takes place only by means of a long and thin fibrous band. This method of treatment has now been abandoned for moderate or even complete extension. Anchylosis or articular stiffness does not depend, in fact, on the position given to the limb, but on prolonged inmobilization of the joint.

The more rational idea, says M. FRAIPONT in a recent article on this subject in the *Annales de la Société Medico-Chirurgicale de Liége*, is to place the forearm in a position which permits the better approximation of the bony fragments. This position is complete extension. On the anterior face of the elbow is placed a rigid splint, and the upper fragment of the bone, held up by the triceps, is drawn down by strips of adhesive plaster which pass over the summit of the olecranon and cross the forearm in a spiral. The approximation of the bony parts may be done exactly in spare persons, where the fracture is accompanied by only a moderate degree of extravasation; but when blood is extravasated into the joint, especially when the quantity is considerable, coaptation is difficult or impossible. Folin advises delay until the swelling has been dispersed by the use of a fixation apparatus. But for this 8 or 10 days are necessary, and then it is too late to hope for bony union, even if we can succeed in placing the upper fragment against the body of the bone, for the blood between the fragments has had time to begin fibrous organization, and the new tissues play the part of foreign bodies which hinder consolidation. Lauenstein two years ago proposed to treat fractures of the olecranon by Volkmann and Schede's method for fractures of the patella—antiseptic puncture of the joint by means of a large trocar, removing as much as possible of the extravasation, which is the great obstacle to coaptation, and then approximate the fragments by adhesive strips, the forearm being fixed in complete extension by means of an anterior splint. He has reported two cases in which this method was successfully used; but it must be said that in these cases the patients came under treatment immediately after the injury, and before the blood had time to coagulate. But coagulation soon takes place—a few hours after the fracture—and the mass is then too solid to be removed by a trocar; in such cases puncture is useless, and may be dangerous despite antisepsis, on account of the blood clots in the tissues.

In a criticism on Lauenstein's article two years ago, Fraipont expressed the opinion that it would be possible in fractures of the olecranon, as in those of the patella, to practice metallic bony suture, after having carefully and antiseptically cleansed the articulation and the peri-articular tissues; and last April he had an opportunity of carrying out this idea in the case of a woman, 44 years old, who had sustained a comminuted fracture of the olecranon, the upper fragment being in several pieces. There was very great swelling of the elbow, so much so that the joint had assumed a cylindrical shape, and was filled with blood clots, which crepitated on pressure. Under such circumstances puncture of the joint could have evacuated only what fluid there was in the joint—at best a very small quantity—and it was decided to practice metallic suture. The operation was done after the most minute antiseptic precautions had been taken, in narcosis, and after an Esmarch's bandage had been applied to the upper part of the arm. A longitudinal incision 12 centimetres long was made at the middle of the posterior surface of the elbow, taking in the seat of the fracture. The intervals between the fragments were filled with clots of blood, black, resistant, and firmly

adherent to the bone, so that they had to be removed with a curette. Similar clots were found under the skin and in all the peri-articular tissues, and a few in the joint itself, but there was very little fluid blood. The cleansing was made with the greatest care, and under almost continuous irrigation with a 1 per cent. solution of corrosive sublimate. The fracture was transverse, and the upper fragment was divided into three pieces, a median and two small lateral, which were adherent to the fibrous tissues surrounding them. The fragments were brought together and fitted by means of a single metallic suture, which passed through the three pieces, then through the upper part of the ulna, the articular surfaces being avoided. The forearm was placed in forced extension. The silver suture was perfectly twisted and flattened on the bone. The articular capsule, torn from right to left, was then sewn up with silk, and the skin was then united by means of deep and superficial sutures. No apparatus for drainage was applied. The joint was then covered with a dry iodoform and other dressing.

The patient left the hospital on the fourth day, having had no general reaction whatever. She returned on the fifteenth day in excellent condition, when the extension apparatus and the dressings were removed. There was no trace of local reaction or of swelling, and the wound had healed by first intention. The sutures were removed, and after applying a layer of iodoformized collodion over the line of suture the forearm was placed in a position of moderate flexion on the arm, and fixed in this position by means of a plaster apparatus. Five weeks after the injury the second and last dressing was removed, and bony union was found to be complete. Tepid baths, massage and passive movements were then begun, and in three weeks the woman had perfect use of her arm; she made all the movements of the forearm with ease.

TREPHINING IN EPILEPSY.

DR. W. B. FLETCHER, Superintendent of the Indiana Hospital for the Insane, Indianapolis, reports, in the *American Journal of Insanity*, October, 1887, 8 cases of trephining for traumatic epilepsy. In these cases insanity did not occur at or near the time of the injury, but some years afterwards. In 3 cases epilepsy preceded the insanity, but remote from the time of the injury. In all but one (and in that case the injury was most extensive in appearance) very strong adhesions to the dura were found. All the patients were, at the time of the operation, melancholic, suicidal, profane, and 4 destructive to clothing; none are so now.

"I believe," says Dr. Fletcher, "that in traumatic injury, in which sunstroke is included by most authorities, the pain and reflex nervous affections most frequently arise from the inflamed and adherent dura, at points where one of the three sensory branches of the fifth nerve is involved. In none of these cases do I think the cortex had undergone any pathological change."

In two cases it was noticed that in tearing up the adhesions the face, platysma and fingers on the same side were convulsed, while a probe passed freely upon and into the convolutions without causing visible sign of excitement. It would be comparatively easy, says the author, to locate most injuries and diseases of the cerebrum, were it not for the complicated nervous connection of the dura mater. As Duret says: "Their varied and, so to speak, protean manifestations tend at each step to complicate the whole symptomatology by superimposing themselves in the phenomena due to lesions of the nerve centres proper." More than this, every one knows that cicatrices of the scalp from old wounds often give the impression of depressed bone. They are often sites of acute pain, may cause insanity, and partial paralysis and convulsions, from the fact that the dural branches of the fifth nerve are involved in the external cicatrices.

In view of the fact that insanity so often follows fracture and depression of the skull, Dr. Fletcher is inclined to inculcate the doctrines of Hunter regarding injuries of the head: "As we cannot tell for certain at the time whether the symptoms arise from concussion, compression or extravasation of blood, it may be more advisable to trephine, as the operation can do no harm." That it is a safe procedure to make exploratory openings into the skull, through the dura, and tap the cortical substance with a probe or probe-pointed needle, most surgeons will readily admit. And there is probably a great deal of force in Dr. Fletcher's remark, that more surgical treatment in our hospitals for the insane would add to our percentage of cures.

THE DEATH OF DR. GUNN.

MOSES GUNN, A.M., M.D., LL.D., died at his residence in this city November 4, after several months of suffering from malignant disease of the stomach. He was born in East Bloomfield, Ontario Co., New York, April, 1822, received a fair academic education in the schools of his native town, and in 1846

received the degree of M.D. at the Geneva Medical College, Geneva, N. Y. He commenced practice the same year in Ann Arbor, Michigan; and in addition to ordinary practice, he commenced giving instruction in anatomy to such students and practitioners as chose to attend his lectures.

In 1849 the State University of Michigan, located at Ann Arbor, organized a Department of Medicine and Surgery, and Dr. Gunn was appointed to the Professorship of Anatomy and Surgery, and commenced his first regular course in October, 1850. In 1854, he relinquished the course in anatomy, and restricted his teaching to surgery exclusively in the University until 1867. In the spring of that year he accepted an invitation to fill the Professorship of Surgery in the Rush Medical College in Chicago, made vacant by the death of Prof. Daniel Brainard in October, 1866, and removed his residence to that city, where he entered upon the general practice of surgery and continued to fulfil the duties of his professorship until the close of the college term of 1886–7. During the seventeen years of his connection with the Michigan University, and the twenty subsequently with the Rush Medical College, Professor Gunn won and maintained a high reputation as a practical surgeon, a popular teacher, and a man of honor. By his death, the College Faculty has lost one of the oldest and strongest of its members, and the community one of its most kind and skilful surgeons.

THE CROWN PRINCE AGAIN IN DANGER.

LONDON, Nov. 7.—Dr. Mackenzie, who has been suddenly summoned to San Remo to attend the Crown Prince of Germany, telegraphs to-night: "There is a recurrence of the growth lower down. I am issuing unfavorable bulletins to-night." It is thought here that it will be necessary for the patient to undergo another operation.

BERLIN, Nov. 7.—Drs. Schroerer and Krause have been ordered to San Remo to consult with the English physician. Prince William, son of the Crown Prince, also leaves for San Remo to-night.

PEDDLING AND PRESCRIBING GLASSES.—DRS. L. WEBSTER FOX and G. M. GOULD have recently made a very timely and sensible plea for a law restraining peddlers, jewellers and opticians from prescribing glasses. They cite many cases of injury, often permanent, to eyes from errors due to ignorance, and claim that such "opticians" should be as much under legal restraint as druggists.

THE BRAINS OF THE INSANE.—POGGI, says the *American Journal of Psychology*, examined the cerebral convolutions of fifty brains of the insane, and found anomalies more common than in the sane, especially in the left hemisphere. The most frequent anomaly is a double calcarial fissure, or communication between the internal occipito-parietal fissure and the sulci of the cuneiform lobule—40 per cent. The brains of the insane are particularly characterized by numerous anastomotic folds.

THE MEDICAL INVESTIGATOR.—Dr. S. F. Smith, of Louisville, Ky., proposes to publish a 24 page weekly, *temperance medical journal*, with this title, commencing on the first Wednesday in January, 1888; price $2 per annum. We wish him and his journal abundant success.

THE J. B. LIPPINCOTT COMPANY, publishers of *The Archives of Pediatrics*, edited by W. P. Watson, M.D., announce that in the issue of the January number, 1888, will begin a series of articles on the "Therapeutics of Infancy and Childhood," by Prof. A. Jacobi, of New York.

THE AMERICAN JOURNAL OF PSYCHOLOGY is the title of a quarterly journal the first number of which has just appeared. It is edited by Professor G. Stanley Hall, of Johns Hopkins University. Its object is to record psychological work of a scientific, as distinct from a speculative character.

NEW YORK STATE MEDICAL ASSOCIATION.—The fifth special meeting of the Fifth District Branch will be held in the Pavilion Hotel, New Brighton, Staten Island, at 1 P.M. on Tuesday, November 15, 1887.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF VIRGINIA.

Eighteenth Annual Meeting, held in Richmond, October 18, 19, 20 and 21, 1887.

FIRST DAY.

The Eighteenth Annual Session of the Medical Society of Virginia convened in the Capitol Building in the city of Richmond, Va., Tuesday night, 8 o'clock, October 18. A very large audience of ladies and gentlemen, not doctors, was present to witness the opening of the session. The session was called to order by the President, DR. BEDFORD BROWN, of Alexandria, Va. After prayer by Rev. S. S. Lambeth, of one of the Methodist churches in this

city, DR. THOS. J. MOORE delivered the *Address of Welcome.*

THE PRESIDENT then introduced DR. WM. S. CHRISTIAN, of Urbanna, Middlesex County, Va., who delivered the *Address to the Public and Profession*, and announced as his subject:

SOME OF THE DIFFICULTIES IN THE WAY OF THE SUCCESSFUL PRACTICE OF MEDICINE.

He classified the difficulties as either those that necessarily belong to the profession of medicine, and into those incidental thereto or produced by persons and things outside of the profession.

DR. WM. D. TURNER, of Fergusson's Wharf, Va., as chairman of the committee on nominations, presented a list of

SEVENTY-THREE APPLICANTS FOR FELLOWSHIP,

which the committee had approved, and on motion the gentlemen were elected Fellows.

WEDNESDAY, OCTOBER 19—SECOND DAY.

After the usual routine proceedings of organization, Vice-President Dr. Alex Harris, of Jeffersonton, was invited to assume the Chair.

THE PRESIDENT, DR. BEDFORD BROWN, of Alexander, then delivered the *Address of the President.* His subject was:

THE ADVANTAGES OF THE PRACTICAL STUDY OF MEDICAL SCIENCE AS A MEANS OF PROMOTING PROFESSIONAL SUCCESS.

The proposition contained in the title was well sustained by facts and logical deductions.

The next order of business being the discussion of the regularly selected subject, the appointed leader of the discussion, DR. HUNTER MCGUIRE, of Richmond, read a paper on

THE CHOICE OF GENERAL ANÆSTHETICS.

(See page 619.)

On invitation by the President, DR. WILLIAM A. HAMMOND, of New York, said that while listening to the paper of Dr. McGuire, he felt that he was sitting at the feet of a master. And yet as he had had experience with both ether and chloroform, especially while a surgeon in the U. S. Army years ago, he felt that he had a right to an opinion on the subject under discussion, which he would take the liberty of expressing.

He had been one of the unfortunates who had witnessed two deaths from the surgical use of chloroform. His first fatal case occurred about thirty-five years ago while he was serving as an assistant surgeon in the U. S. Army, out on the frontiers. A dragoon had been drunk, and had very seriously hurt his arm. He did not see the dragoon until about two weeks afterwards. He then undertook to examine the injury by first placing the patient under chloroform. Just as he was getting under the influence of the anæsthetic, the dragoon died *suddenly.*

Previous to the administration, there was nothing to indicate that he could not take chloroform. But upon post-mortem examination when his heart was taken out, and cut up into minute sections, and placed under the microscope, that organ was found to be undergoing fatty degeneration. This condition could not have been recognized by the naked eye—it required the microscope to detect it. Nor was the morbid condition sufficiently far advanced to allow of its diagnosis by physical signs or any of the usual symptoms of advanced fatty degeneration. There is no way known to him by which such cases can be foretold; and yet he could not resist the conclusion that the fatty heart was the cause of that dragoon's death. There was nothing else to possibly account for it. The case was reported at the time in the *American Journal of Medical Sciences.* The chloroform was carefully examined, and found to be good.

The second case of death by chloroform under his observation occurred in Virginia. Just after the memorable battle near Fredericksburg, during the late war, a soldier was brought in who needed exsection of the elbow. The circumstances of the battle made it desirable that he "should be a little in in a hurry." Just as he was picking up his knife to begin the operation, the soldier died *suddenly*—without a moment's warning, exactly as Dr. McGuire had described his case as dying. Since then, he has not used chloroform much, but has adopted ether in preference. Whether he had had remote deaths or not from the use of ether, he does not pretend to say—especially after what Dr. McGuire has said about the more than possible after effects of its administration. But this he has to say, that he has never been horrified by a sudden death while using it. In fact, he does not think that he has ever had any bad effects from the use of ether. He wishes he thought chloroform as safe to use as ether, for undoubtedly chloroform is much more agreeable both to the patient and administrator. He wishes he could make more emphatic than Dr. McGuire has already done, the great importance of not being in a hurry when about to give chloroform. For army uses, ether he thinks, is unquestionably to be preferred.

As to how these anæsthetics kill, he is unable to satisfactorily explain. Chloroform undoubtedly kills by stopping the heart's action in the majority of cases; but why, he does not know. As to ether, its immediate dangers are so much less than chloroform that he prefers it. As to the after effects of this agent, Dr. McGuire is most probably correct in saying that deaths are due to it that are not attributed to it in the mortuary tables.

Some years ago a Frenchman proposed venous injection of chloral hydrate. The anæsthesia lasts from seven to eight hours. Dr. Hammond has adopted this anæsthetic in only one case. It was a case in which he determined to stretch the sciatic nerve. He injected a solution of chloral containing 7 grains of chloral into the cellular tissue, instead of making it intra-venous. Anæsthesia followed in a few minutes and lasted five hours, with sleep, most if not all the time. The nerve was stretched according to the usual method without any sensation of pain.

Another good anæsthetic is *hypnotism*, but this is liable to much abuse in the hands of charlatans. The patient hypnotized is not absolutely insensible, but the cutting of the surgeon cannot be said to be painful. It does not seem that more than about one in five or six are proper subjects for hypnotism, and it cannot well be determined who are fit subjects until the experiment is made upon the individual. The process is not due to the party who operates, but to the susceptibility of the person to be acted upon.

Dr. George H. Rohé, of Baltimore, Md., an invited guest, said he was much pleased with the fair manner in which Dr. McGuire had opened the discussion. As to the danger of paralysis of the heart during chloroform administration, he thought the proper explanation might be that given by Brunton. Chloroform paralyzes the vaso-motor centres; while, during ether narcosis, the vaso-motor centres continue active for a much greater length of time. As to the rarity of deaths from chloroform given during labor, he thought Barnes' explanation a satisfactory one. It is that during gestation, the heart undergoes a conservative hypertrophy, and hence has greater power to resist the paralyzing influence of chloroform. This condition of the heart does not occur usually in cases that are brought to the attention of the surgeon for operation. Generally speaking, in such cases, the disease or injury demanding the use of the surgeon's knife is such as to impair the tone of the heart, either for the time or permanently. In surgical cases, also, the dread of the anæsthetic or the manner of its administration acts as a shock to the nervous system. As to the prevalent opinion about the immunity of children from the dangers of chloroform, as remarked upon by Dr. McGuire, Dr. Rohé quoted from authorities to show that about one in ten of all deaths from chloroform occur in children under 12 years of age. He thought, also, that Dr. McGuire's statistics could stand correction as to the stage of the administration when the greatest danger presented. He referred to authorities to show that about one-half of all fatal cases from chloroform occurred either during the surgical operation or else immediately afterwards. He believed it to be good doctrine to always advise the administration beforehand of a suitable dose of atropia with morphia. This combination maintains anæsthesia, while it, at the same time, keeps up the activity of the vaso-motor centres. He agrees with Nussbaum in objecting to the use of ether before beginning with chloroform. There have been two deaths from chloroform in Baltimore during the last two years. He has given ether in the manner that Dr. McGuire opposes. But he has never seen the depressing effects upon the heart, but upon the respiratory organs. To sum up, he believes ether safer than chloroform in the large majority of cases.

Dr. Herbert N. Nash, of Norfolk, Va., said he has now changed his preference from chloroform to ether when an operation is to last over half an hour. He believes chloroform kills chiefly by depriving the nervous centres of the requisite amount of oxygen. He has seen distressing effects come from ether. Contrary to Dr. McGuire's opinion, he thinks the presence of pain has an influence in overcoming the paralyzing influence of chloroform. In children, his experience has confirmed the preference expressed by Dr. McGuire for chloroform.

Dr. J. S. Wellford, of Richmond, Va., said that during his service as surgeon in the Confederate Army, he could not get ether as freely as he wanted it, and hence had to use chloroform, and one death came under his observation. That death was probably due to methylated chloroform, received from England. Methylated chloroform is cheaper than ethylated. The purity of the chloroform is, therefore, a very important matter. Anxiety on the part of the operator, especially if he be in haste, may cause him to overdo the matter and "crowd" the chloroform so as to cause suffocation. Ether is safer under such circumstances because it contains a very large percentage of oxygen. Anstie has shown that air containing over 5 per cent. of chloroform is dangerous. Death has frequently occurred before commencing the operation after the administration of chloroform. Given internally, it is a valuable anæsthetic, the full virtues of which use have not been sufficiently dwelt upon by authors. Two-thirds of the deaths from chloroform have occurred in the dental chair, showing the great danger of administering this agent while the patient is in less than the prone position. One, if not the chief, reason why we do not have fatal cases in obstetrical practice is because chloroform is given to allay the suffering from "pains" that throw the blood into the cerebral circulation. In surgical cases, there are no pains when the patient is under the influence of the anæsthetic. Anstie has shown that the genito-anal region and the matrix of the great toe are about the last regions of the body to become anæsthetized. Hence operations about these parts require more chloroform than other cases, and hence the great number of deaths that occur from anæsthesia when these parts are to be operated upon. The purity of the agent is an important matter, and the manner of administration is just as important. Such was the harmlessness of chloroform administrations in the Confederate Army that hospital stewards, even, often gave it. The secret was undoubtedly due to the fact that they were taught the importance of having a plenty of fresh air mixed with the chloroform during its administration. There is danger in giving chloroform to those whose hearts have been overtaxed, as by alcoholism or prolonged intoxication. Ether deaths are frequently attributed to intercurrent pneumonia, and therefore are not put down as deaths from the anæsthetic. He ventures to assert that when the true record of deaths by anæsthetics is written up, as many fatalities, if not more, will be found to be due to ether, but they are of secondary occurrence. His conclusion is that both ether and chloroform are dangerous, perhaps in about equal ratio. Hence do not give either unless there is a clear indication for one or the other.

Dr. I. S. Stone, of Lincoln, Va., remarked that for operations requiring only a few moments, he preferred *bromide of ethyl* to ether or chloroform. He thinks it much safer than chloroform, and it does not

carry with it the dangers attributed by Dr. Wellford to ether.

DR. ALEX. HARRIS, of Jeffersonton, Va., said he had used both ether and chloroform since their popular introduction into the armamentarium of the doctor. As he has had no accident from chloroform, and as it is so much more agreeable than ether to give and to take, he saw no reason to surrender his preference for chloroform. He always freely admits air during chloroform administrations. He is not surprised at the record of deaths from its use by those who give it as they would give ether. The agents are entirely different chemically, and call for different methods of administration. As a complication of the prolonged or excessive use of chloroform, he has seen jaundice occur.

DR. J. E. CHANCELLOR, of the University of Virginia, said he has used, and been a close observer of the use of both the anæsthetics since their introduction. He has settled upon the combined use of ether and chloroform as safer than either of the two alone; and says further that the combination acts more quickly. He has also used the combination of one-third alcohol and two thirds chloroform; and asked Dr. McGuire if he had any experience with such a combination?

DR. MCGUIRE said that he had frequently used the "A. C. and E. mixture," but has abandoned it because he gets some of the dangers of *both* ether and chloroform by its use, whereas the danger of either was as much as he is willing to be responsible for.

DR. CHANCELLOR said he had seen one death under the use of chloroform, but he is unwilling to testify whether the anæsthetic or the shock of injury killed the patient.

DR. W. T. OPPENHEIMER, of Richmond, Va., remarked that all cases of ether deaths are by no means recorded. He had witnessed two deaths by this agent in New York City. One of the cases was in the practice of Dr. Keith. The ether was being given for the operation of excision of the knee. The other case occurred in the practice of Dr. Bryant. He has since adopted chloroform, and prefers it. Chloroform is specially preferable if there is hæmorrhagic diathesis. In fact, in a case of hæmorrhage from the lungs, bleeding was several times arrested for three or four hours by the repeated administrations of chloroform.

DR. THOMAS R. EVANS, of Mt. Carbon, West Va., arose principally to say a word for the country doctor. He is usually unable to carry around with him more than an ounce or so. He has several times derived the desired anæsthesia by giving *chloroform internally* in teaspoonful doses. This dose will sometimes anæsthetize for several hours at a time, and by common consent, this practice seems to be less risky to the patient's life. He does not know why it is not more generally adopted.

DR. E. W. ROWE, of Orange C. H., Va., has had no death from either, but has been scared by both, especially when administered soon after eating. He inclines to a preference for chloroform, being always careful as to the time and mode of its administration.

In answer to questions, DR. HAMMOND said he has had no experience with rapid breathing as an anæsthetic, but has known it to cause convulsions simulating those of epilepsy. As to chloral, the solution of 7 or 8 grains should be given as different injections in different parts of the body. He has had one death from chloral. The patient was in the habit of taking 20 grains three times daily. After about a year or so of such habit, sudden stupor came on, and he died. The exact manner of nis death was uncertain.

DR. WM. W. PARKER, of Richmond, Va., thinks he was the first doctor in this State to use chloroform after its announcement as an anæsthetic. One of his patients years ago had got in the habit of using it to such an extent as to use $3,000 worth in three years' time, and finally died from it. Properly given, he thinks chloroform the safer of the two anæsthetics. It should not be given from a cone or buttoned shirt cuff or anything else of the kind. The safe way of administering it is for the patient to lie down, with clothing perfectly loose and using an open napkin or a suitably shaped sponge. This is to be moistened with a few drops of chloroform as often as it evaporates, and held three or four inches above the nose and mouth. In this way, all danger of not having enough of fresh air is avoided, and the patient is not overwhelmed, so to speak. Exercise a little patience, and all will go well. In this way, on one occasion, he gave chloroform almost continually, night and day, for three weeks, without an alarming or a threatening symptom.

DR. J. GRAMMER, of Halifax C. H., thought that prominent mention should be made of whiskey as an anæsthetic in such a discussion as this. He referred to a case that came under the observation of Dr. J. Herbert Claiborne, of Petersburg, Va., in which a woman who was drunk passed entirely through all the pangs of labor without the slightest evidence or any after recollection of having had any suffering. During the war, many wounded soldiers were operated on without suffering pain—the anæsthetic being whiskey, because of the lack of chloroform.

DR. W. L. ROBINSON, of Danville, while generally preferring chloroform, could not agree with Dr. Wellford in thinking that the presence of "the pains" was the cause of the exemption of danger in chloroform administrations during labor. We have pains of the severest kind in many surgical operations where the patient dies. As to the matter of hæmorrhage being checked by chloroform, which has been referred to, he has known hæmorrhages begin in labor, after the use of this agent, which he saw no other way to account for than as a result of the use of chloroform.

THE PRESIDENT mentioned a case which came under his immediate care some thirty years ago. A boy, aged 17 years, was kicked by a horse, removing a large portion of the frontal bone, and injuring the anterior lobes of the cerebral hemispheres. Singularly, the mental condition remained good; but the injury so exposed the brain to view as to allow of excellent opportunities for examination. To apply the proper surgical dressings, it was necessary to resort to an anæsthetic to relieve the suffering. A

mixture of chloroform and ether was used. It was the first case on record where an opportunity was allowed to witness the effect of chloroform, etc., on the brain circulation. With each administration of the anæsthetic the brain was seen to become anæmic—almost bloodless. The natural pulsations were seen to gradually fade away as the anæsthesia became more and more profound, until finally the brain seemed almost bloodless. The observations were repeated six times so as to confirm the fact that the condition was due to the anæsthetics. Whether it was the chloroform or the ether that caused this condition of things he does not pretend to say, as neither was used alone.

Dr. McGuire, in closing the discussion, said that as to the dangerous symptoms that have been observed during the administration of anæsthetics, the profession agrees that ether is not so safe in diseases of the kidneys. He had not undertaken the task of writing an exhaustive paper on the subject, but had tried to confine himself chiefly to some mooted points, in the hope of getting light on them. He fully agrees with Dr. Wellford that the purity of the agent, whether it be ether or chloroform, is a very important matter. In dentistry there are two causes of danger. One is the upright or only half reclining position in the chair, and the other is the inclination of the dentist to pull the tooth before there is complete anæsthesia. Mr. Keith, of Edinburgh, has used the Clover bag for ether administration for two hours or more at a time. But such a bag for chloroform would be dangerous. Dr. D. Hayes Agnew, of Philadelphia, has been unfortunate enough to recently add another to the death list from ether; and no one who knows his skill and caution can doubt for a moment but that the ether was properly given by him. It simply illustrates that anæsthetics are dangerous, and should not be resorted to without sufficient justification for the use of such a powerful agent. As a conclusion from his study of the subject, he believes that one anæsthetic is about as dangerous as the other, and that each should be selected on the principle of the special fitness of the subject for one or the other.

(*To be concluded.*)

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, June 24, 1887.

The President, Chas. Warrington Earle, M.D., in the Chair.

(*Concluded from page 604.*)

Dr. Bayard Holmes read a paper entitled

THE BACTERIOLOGICAL EXAMINATION OF AN EXTRA-UTERINE FŒTUS, AND THÉORETICAL CONSIDERATIONS OF THE BACTERIOLOGICAL CONDITION AND FATE OF DEAD, RETAINED FŒTUSES.

I. These nine tubes of nutrient gelatin containing pieces of the different organs of an extra-uterine fœtus was removed by Dr. Christian Fenger, in the Milwaukee Hospital, on the 7th of March last. The diagnosis of extra-uterine pregnancy was made some months previous by Dr. Senn, and the subsequent death of the fœtus was recognized by Dr. Mackie. The vagina had been rendered as sterile as possible before the operation by means of the antiseptic tampon and irrigation. The incision in the posterior wall of the vagina was made with Paquelin's cautery, and a way opened between the rectum and vagina with dull instruments. The sac about the fœtus was then cut through with the cautery, the short forceps applied to the presenting head, and the fœtus delivered. Everything was done under the strictest antiseptic precautions. The duration of the operation was about two hours. The fœtus presented a very fresh and natural appearance, though it was a little softened. It had been dead two months.

As soon as the fœtus was delivered it was wrapped in a large piece of carbolized gauze, and conveyed to an adjoining room, where everything was ready for this examination. Here the large cavities were quickly opened with the sterilized knife, and pieces of the various organs and their contents removed with instruments sterilized with heat. These pieces were put in the liquefied blood-serum gelatin, which was then allowed to cool. Ten tubes were used in the examination. One was unfortunately broken in the laboratory after it had been kept long enough to prove its sterility. The culture medium was a 20 per cent. solution of gelatin in peptonized beef-tea, to which an equal quantity of sterile hydrocele fluid had been added. This gave a medium which contained only 10 per cent. of gelatin. It coagulated if heated above 62° C., but had the advantage of being very nutrient and yet being liquefied by the action of certain bacteria.

With one exception all of these tubes are, after almost four months, solid and unchanged. One contains a piece of the skin cut from the abdominal wall of the fœtus. Within 48 hours after implantation a small, white, liquefying colony was noticed at the side of the little piece of skin. Examination showed that it was the *Bacillus subtilis*. Now the gelatin is completely liquefied, and rendered turbid by the bacteria which have been mixed with it in transportation and handling. There is no doubt but that this was an accidental infection either during or after the operation. In the eight solid tubes remaining are some of the hair and sebaceous matter, the brain, an inch of intestine and its contained meconium, a piece of the heart, a piece of the liver, a piece of the lung, one of the phalangeal bones, and one perfectly transparent tube which contains a portion of the fluid from the abdominal cavity.

This examination is conclusive evidence that the organs examined were free from any living bacteria or their spores that were capable of growing in the culture medium used. If any evidence of the perfectly sterile condition of this fœtus and its membranes were wanting after it had been retained two months subsequent to its death in the abdomen of the mother, this examination would seem to supply that want. Could we be certain that the culture

medium used would support the life of all bacteria, nothing more could be desired. We may, however, safely assume that this fœtus and its intestinal contents were perfectly sterile.

II.—During the past ten years, the burden of bacterial research has proven conclusively that the healthy human body is free from all living micro-organisms. The fate of bacteria introduced into the circulation of healthy animals has received some attention. It may be safely said that non-pathogenic bacteria cause no more disturbance than an equal quantity of finely divided, lifeless vegetable matter. They are quickly taken up by the white blood-corpuscles, and eliminated by the lymphatic system, or remain imbedded in the reticulum of some of its glands.

The pathogenic bacteria also, in some cases at least, meet with a similar fate, being unable to overcome the normal physiological resistance of the healthy host. Thus even the *Bacillus anthracis* was shown by Feser to be unable to invade rats that had been fed on flesh; though, after having been restricted to a vegetable diet, the same animals fell easy victims to inoculations. Birds, under ordinary conditions, resist inoculations of anthrax. Pasteur has shown that this due to the high temperature of the order, which is little below the limit of multiplication of the bacillus in artificial culture media. If the temperature of the fowls is reduced two or three degrees by immersing the lower portion of the body in cold water, they become susceptible to inoculations. Passet finds that the *Staphylococcus cereus albus* and *flavus* produce no action when injected into the injured subcutaneous tissues of animals, although they produce suppuration in man. Max Schüler concluded from his experiments on animals, even before the true bacterial origin of tuberculosis had been demonstrated, that the infection of bones and joints did not take place, as a rule, after injection of tuberculous matter into the circulation, without previous contusion of the selected part, or its irritation by injected chemicals. Kœnig arrives at the same conclusion from a clinical consideration of tuberculosis. It is probable, therefore, that the bacilli in the circulation are eliminated or destroyed.

When pathogenic bacteria are introduced into the blood-current after the mechanical or chemical injury of some selected part, they multiply only at this point of diminished physiological resistance, although their presence can be demonstrated in other parts of the body. According to Huber, the *Bacillus anthracis* multiplies entirely within the blood-vessels in which stasis has been produced. In distant parts of the body, only scattered, single, non-vegetating individuals are found, and these are frequently contained in the reticulum of white blood-corpuscles. That these scattered bacteria are alive has been shown by Rosenbach in the case of the *Staphylococcus albus* by means of culture methods. Huber found the bacteria never passed outside of the blood-vessels into the œdematous or suppurative (?) exudate.

The resistance of the blood may be so low that multiplication of the invading microbe takes place in the circulating blood itself. Such a condition is clinically termed septicæmia in distinction from sapræmia and pyæmia. It usually follows one of these conditions. It may, however, be due to the invasion of a peculiarly powerful bacterium, or an unusual susceptibility in the part invaded.

Nearly all bacteria, under certain circumstances, resort to a method of development and reproduction called spore formation. It begins with the appearance of a very small granule in the protoplasm of a hitherto vegetating cell. This granule increases in volume, and becomes a strongly refracting sharply outlined body, which rapidly reaches a definite size, and then represents a perfect spore. The spore is always smaller than the mother cell. The protoplasm and former contents of the cell disappear in proportion to the growth of the spore. Finally, the spore appears in the delicate membrane of the mother cell suspended in a clear, watery fluid only. The causes of spore formation are not yet fully known in all species. In some it seems to depend npon the unfavorable condition of the nourishing medium, while in others it bears no relation to vegetation. Spores endure vicissitudes of heat and cold and chemical action better than vegetating cells, and also resist the action of staining fluids.

It is probable, though, so far as I know, yet undemonstrated, that the pyogenic bacteria leave behind in the cicatricial tissue after suppuration such lasting spores. Of this there is abundant clinical evidence in the case of such diseases as pneumonia, rheumatism, osteo-myelitis, and erysipelas. In individuals that have once been subjected to an attack of one of these diseases, sudden outbreaks of the long absent disease follow slight causes which tend to produce a diminished physiological resistance.

The fate of bacteria in the circulation may be thus summarized:

1. They may be wholly destroyed without multiplication.

2. They may multiply at one or two points of diminished physiological resistance, and remain only scattered and non-vegetating in other parts of the body.

3. They multiply in the general circulation everywhere.

4. After localized multiplication, they may produce lasting spores which remain a long time imbedded in the cicatricial residue and, at some later period, under favorable circumstances, these may again germinate and multiply, and give rise to their own peculiar form of inflammation.

I recognize the fact that the formation of spores in the living body has yet to be demonstrated, but it seems to me that the clinical evidence is sufficient, when considered with the well-known laws of spore formation in exhausted artificial culture media, to warrant this assumption for theoretical purposes.

3. When dead animal tissue is introduced into the living animal body, it produces no considerable inflammation. A multiplication of the surrounding cell elements takes place, with increased vascularization. The dead tissue is invaded, taken up in part by white blood-corpuscles, and carried away. There may be a greater or less residue, surrounded by a

mass of cicatricial granulations. The neighboring lymphatics may contain portions of the more resisting and often pigmented residue. We see this removal illustrated every day, as Senn has shown in the case of catgut ligatures. When they are perfectly antiseptic, they never give rise to any undue inflammation or suppuration. Again, the same process is observed in subcutaneous operations, in cerebral hæmorrhage, hæmorrhage about simple fractures, and into the large joints. The completeness of absorption depends, in these cases, upon the amount of the hæmorrhage, and the age and nutrition of the individual. Suppuration or other unfavorable results take place with extreme infrequency.

The fate of a retained, dead fœtus, therefore, whatever its position, must depend almost entirely upon its bacterial condition. If it contain no pyogenic or putrefactive bacteria, one would expect it to produce no more inconvenience than would result from its size and weight. It may become macerated, mummified, or calcified. By pressure atrophy, it may find its way into the intestinal tract. It may be discharged with a living fœtus. It may later become infected, and give rise to all the serious consequences of suppuration. Or, it may be artificially removed.

IV.—There is little doubt that the living fœtus is free from all micro-organisms. Leopold put young fœtuses into the abdominal cavities of rabbits under strict antiseptic precautions, and found that they gave rise to no suppuration. They were either wholly or partly absorbed, or they remained unchanged, or they were reduced to a small residue resembling lithopedia. Had these fœtuses contained any living pyogenic bacteria or their spores, the warmth of the abdomen and the absolute lack of resistance in the dead fœtuses would have resulted in their rapid destruction, and in suppuration in the living tissue about. Küchenmeister has collected a large number of cases in which extra-uterine fœtuses have remained in the human abdomen many years, sometimes almost unchanged, and at other times in various states of absorption.

Of all parts of the fœtus, the meconium, being itself without possibility of physiological resistance, would be most likely to show the presence of infection. Its infection might take place either through previous infection of the amniotic fluid from the mother's circulation, or through infection of the fœtus by way of the placenta. The amniotic fluid might be infected more easily than the fœtus, as it has been shown by Wiener that when coloring matter was injected into the circulation of the mother, the amniotic fluid was stained at the end of a few minutes, and the meconium was also soon colored by the swallowed fluid, while at the same time not a trace of coloring matter could be found in the kidneys or other organs of the fœtus. We might also suppose that occasionally the amniotic fluid would be infected from the interior of the uterus itself, as the lymphatics of the amnion have been shown to be connected directly with those of the uterus. Escherich has examined bacteriologically the meconium of three infants that died during birth. Within a few hours after the birth of the fœtuses, their abdomens were opened under every indicated precaution, and double ligatures put about one or more loops of intestines. These were then washed with a sublimate solution, and opened with a sterilized knife. From the contents of these loops, inoculations were made in peptonized beef-tea gelatin, and in liquid sterilized blood-serum. After incubation for several weeks, no change was discernible; so that in these three cases at least, the intestinal contents were free from any micro-organism that would grow in the mediums used. The same experimenter found the meconium of infants that lived only a few hours infected by very few kinds of bacteria, and these in small numbers; but if the child lived a day or more, the individuals, as well as the species, became quite numerous. There is no doubt, therefore, that it furnishes abundant nutrition. Bresleau has shown that the presence of swallowed air in the intestines of newly born infants can be demonstrated very early by means of percussion. Escherich considers that the meconium is infected by germs swallowed with the air and dust, in the first efforts of sucking.

The examination of the meconium chemically, while less reliable than the preceding method, furnishes a valuable confirmation. Search was made by Förster, Zweizel and Müller in the meconium of still-born, for products of putrefaction such as indol and phenol, with negative results.

Thus by three separate methods the fœtus has been shown to be free from all micro organisms, and, therefore, when retained in the body of the healthy mother after its physiological or pathological death, is incapable of giving rise to suppuration or destructive inflammatory disturbances.

5. It frequently happens in twin pregnancies within the uterus that the death of one of the fœtuses results after it has attained a considerable size. In these cases the dead fœtus and its annexa seldom give rise to suppuration or inflammation, or hasten in any manner the delivery of the still living infant. At times, also, fœtuses at full term are retained a long time within the uterus, through one cause or another, without producing any unfavorable result.

Bandl cites thirty cases of pregnancy in a rudimentary horn of the uterus, seven of which were retained six months or longer, and in no case did suppuration ensue. It would doubtless be difficult to diagnose a tubal pregnancy from one in a rudimentary horn, even on the cadaver, after any considerable suppuration. This may account for the limited number of observations of this occurrence.

Since infection of a dead fœtus in the uterus or in a rudimentary horn is such a rare occurrence, the infection of a fœtus outside this organ and far removed from infection from the interior of the uterus, the cervix, or the vagina, one would expect to be much more rare.

Unfortunately, this *a priori* conclusion does not seem to be verified by experience. Kiwisch collected 100 cases of extra-uterine pregnancy of all kinds, and it appears from the summary of his cases as given by Bandl that about 37 per cent. of these fœtuses became infected.

Seventeen died of peritonitis more or less acute; 4 died of peritonitis after the fœtus had been long retained; 9 died through a long continued suppuration and perforation; 7 recovered after spontaneous elimination. Hecker collected 132 cases, out of which it seems that about 47 per cent. became infected; 18 died of hectic; 12 died of peritonitis; 28 recovered after discharge of the fœtus through the rectum; 15 recovered after discharge of the fœtus through the abdominal wall.

Out of 500 cases of extra-uterine pregnancy collected by Parry, 248 went to or beyond the full term; and, out of this number, seventy fœtuses were discharged either through the rectum, the vagina, or the abdominal wall. The history of most of these cases shows that this issue was brought about by suppuration, and consequently through infection. Thus, in Parry's cases, 28 per cent. can be considered as infected. During the first year, 12 per cent. of the whole number terminated in suppuration; during the second year, 5 per cent; during the third year 2½ per cent. After this time, less than 2 per cent. were infected each year.

The examination of the statistics from all these sources would lead one to think that there are some sources of infection of dead extra-uterine fœtuses which are not present in cases of cerebral hæmorrhages, pelvic hæmorrhage, hæmorrhage into the large joints, or about simple fractures. In these cases absorption is the rule, and infection and consequent suppuration rarely take place.

6. The three possible methods of infection which seem to be worthy of consideration are the following: 1. Infection of the fœtus before its death, and subsequent suppuration. 2. Simple auto-infection, so-called. 3. Infection through the proximity of pyogenic bacteria or their spores left behind from some previous suppuration.

The first of these methods seems hardly worthy of consideration. The difficulty of the passage of the microbe from the infected blood of the mother is clearly shown by the experiments of Bollanger. He injected into the blood of pregnant sheep the living anthrax bacilli. After a sufficient time had been allowed for the disease to show itself, the animal was killed. The fœtus was then removed, and found perfectly free from bacteria. Klotz found in the whole literature only six cases in which the fœtus was infected with measles during intra-uterine life.

A simple auto infection certainly cannot account for such a large per cent. of infection of extra-uterine fœtuses, since we have seen that this is such a rare occurrence within the uterus itself and in the rudimentary horn. It has been impossible for me to find any statistics relative to the frequency of infection of hæmorrhagic products in different parts of the body. I can only appeal to the experience of every surgeon to testify for me that it is extremely rare. The consideration of Parry's cases in which a large per cent. became infected during the first year, with a gradually diminishing percentage afterwards, is, in itself, quite significant, and shows plainly that whatever the source of infection is, time alone is a very insignificant element.

I now pass to the third possible source of infection. Leitzman considers the contiguity of septic germs as a possible source of infection in these cases, and Spiegelberg declares that lithopœdia may excite suppuration, and that the frequency of this issue is encouraged by labor. There seems to be one factor which Bandl admits to be largely concerned in the etiology of extra-uterine pregnancies which has not received consideration. I refer to the presence of residues of old inflammations in close proximity to the dead fœtus. There is every reason to believe from the consideration of Martin's researches and compilation that these residues which result in the occlusion of the tubes and consequent pathological fetation, are the result of septic or infected inflammation; and it is probable, although, as I have said, yet unproven, that these residues, in a large majority of cases, contain lasting spores. By pressure atrophy from the weight of the dead fœtus, these are brought into connection with a large and rich pabulum, in which they germinate and multiply, and from which they infect the surrounding living tissues. In these they give rise to suppuration, which infiltrates the connective tissue in the direction of the least resistance; and subsequently spontaneous elimination of the fœtus may take place. There seems to be but one thing to be proven to render my consideration of this most potent cause probable. It remains to be shown that spore formation in pyogenic bacteria does take place within the living human body, and that these spores are left behind in the cicatricial tissue resulting from suppurating granulation.

7. If further investigation and research should prove the presence of lasting spores in previously infected tissues and the possibility of their causing subsequent suppuration, their presence should be considered when operating for the removal of living or dead extra-uterine fœtuses, or for diseased tubes. In case any doubt of the sterility of such a fœtus or its surroundings should exist, the fear of the presence of lasting spores would be an additional indication for the use of the antiseptic drain, and the treatment of the sac as an abscess cavity.

It would also render the prognosis less favorable in cases where it is deemed advisable to produce death artificially, early in the life of such an extra-uterine fœtus. Especially should caution be exercised in case of puncture, as this means might make a way, and, at the same time, furnish a material for the latent spores about.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, September 28, 1887.

THE PRESIDENT, J. SOLIS-COHEN, M.D., IN THE CHAIR.

DR. A. C. W. BEECHER reported a case of

COMPOUND FRACTURE OF THE HUMERUS AND INFERIOR MAXILLA, AND OTHER INJURIES, FROM A FALL.

F. L., female, æt. 4 years. On May 20, 1885, fell

from the third story front window of her home into an area leading into the basement, a distance of 38 feet; in her descent she probably struck an iron railing on the steps (which were winding) leading to the front door, which railing was somewhat movable from side to side, having become loosened at one end. As no one saw her falling, it is not known precisely how she struck. She was immediately removed to a hospital, where her wounds were dressed, and in two days her mother removed her to her home, and Dr. G. W. Sparks, the family physician, was sent for, with whom I was subsequently associated in the treatment of the case. On May 24 I saw her for the first time with Dr. Sparks, and as she seemed quite comfortable, and the dressings in place, we did not remove them; but on a subsequent visit, not knowing the character or extent of the injuries, and the discharges being profuse and offensive, the dressings were removed, and then we found a deep, lacerated wound on the thoracic side of the right axilla, about 4 inches in length, extending from in front of the margin of the tendon of the pectoralis major muscle, backward to behind the tendon of the latissimus dorsi, and both of these tendons were somewhat torn (the wound had been brought together by several interrupted sutures when dressed at the hospital, but these had cut out and I did not replace them). No fracture of the ribs, but a fracture of the humerus, probably an epiphyseal separation of the head of the bone from the shaft, as it seemed to be in that situation. A contusion on the posterior surface of the shoulder, over the head of the bone, developed a slough and abscess, which was drained by a seton into the wound in the axilla, so as to prevent the burrowing of pus. The arm was left to hang in a line corresponding with the long axis of the body, and the lower part of the arm and forearm were firmly strapped to the chest by adhesive strips; absorbent cotton and iodoform were placed in the armpit and over the shoulder, and bandages applied over the strips in such a manner as to leave the shoulder bare and the armpit accessible; a felt shoulder-splint, well padded, was then applied to fix the shoulder, and a bandage over the whole. The outer bandage and the splint had to be removed about once in two days to permit the treatment of the wounds underneath; they were washed out by injecting a solution of carbolic acid. The under bandages were only removed when they became displaced or were too much soiled.

A small bruise was noticed on the right side over the crest of the ilium; this gradually degenerated into an abscess containing about an ounce of pus. An examination did not discover any dead bone, a drainage-tube and carbolized cotton were applied, and in due time the abscess healed very kindly.

About three weeks after the injury my attention was called to a small tender spot and swelling on the under side of the lower jaw, to the left of the symphysis. An examination showed that some teeth in the lower jaw near this point had been broken off in the fall, and that one or two loose fragments remained, which I removed with dressing forceps. There was no evidence of complete fracture of the jaw, no displacement, and no crepitation, yet an abscess developed, which was opened externally. Ether was administered for the better examination of the jaw, and a communication was found to extend from the external wound through the jaw into the mouth, and that there were evidences of dead bone, several fragments of which, and two permanent teeth not evolved, were removed, after which it healed up rapidly. Special directions that only liquid food should be administered, so as not to complete what certainly was a partial fracture of the jaw, which the act of chewing would have tended to bring about.

The shock in this case was quite severe and an irritative fever set in, the discharge of pus was profuse, the appetite was capricious and poor, all of which produced rapid emaciation, and her life was threatened. A liberal administration of quinia sulph. in syr. glyc. c., whiskey, dessertspoonful every three hours, milk, eggs, and beef tea, rigidly insisted upon, she soon rallied. The wound under the arm gradually closed, leaving a neat cicatrix, and about July 1 slight passive motion was instituted, which showed that there was little stiffness in the joint, that the cicatrix held to a slight extent the tendons of the pectoralis major and latissimus dorsi muscles, restraining their action somewhat; there was also a lack of power in some of the other muscles of the chest, either for want of use or because they had been injured in the fall.

In the latter part of July the child was taken to camp-meeting; tripping over a board, she was thrown upon her injured shoulder against a large stone. She was brought home, and an examination revealed crepitation at the point of original separation. The arm was again bandaged to the body, the splint applied to the shoulder, and a recovery soon followed. She had had several other falls before and after the above-mentioned, but with no bad results to the injured member.

We have supposed that in the descent from the window the arm was extended from the body in the endeavor to save herself; that her body struck the railing, producing the laceration; with the arm on one side of the railing and the body on the other, that the body was turned by the resistance, the leverage throwing the force against the humerus near its head, and the leverage of the arm and forearm produced the separation of the head from the shaft. The mobility of the railing, together with its angle of inclination, doubtless broke the force of the direct fall from the window, materially reducing it by the time she reached the area, and probably saved her from instantaneous death. How and when in the descent the other injuries were produced is mere conjecture; probably on the steps in the area.

It seems almost providential that she was not instantly killed, and that she did not perish from shock and septicæmia; the large vessels and nerves of the axilla just escaped most serious injury, which will account for the saving of the arm from gangrene or amputation, or both.

She has recovered, with great mobility of the arm at the shoulder-joint, which will be further increased as the products of inflammation become absorbed, and from use of the limb.

DR. O. H. ALLIS said: I think that inasmuch as this was a compound fracture, it would have been good surgery to remove the detached epiphysis. The fact, however, that good union and good motion were obtained, seems to show that this would have been an error. It is also stated by authors that, where separation of the upper humeral epiphysis occurs, this portion of the bone undergoes necrosis, its blood supply not being sufficient to support it. The result of Dr. Beecher's case would seem to indicate that this also was incorrect.

DR. BEECHER said: I am not prepared to say positively that this was a case of epiphyseal fracture or separation, though I believe it was—the injury was so high up. I should like to ask if any observations have been made with reference to the growth of the bone subsequent to epiphyseal separation?

DR. H. R. WHARTON said: I had a case at the Children's Hospital some time ago of a compound fracture high up in the humerus. The upper end of the lower fragment projected into the axilla a distance of two inches. An inch and a half of the lower fragment and a spiculated fragment attached to the head of the bone were removed. The fracture was then reduced and dressed antiseptically and the case did perfectly well. In four weeks there was perfect union and perfect motion. In this case the question came up whether or not there would be sufficient nutrition to keep up the vitality of the head of the bone. It was decided to make the attempt to get union, for if necrosis occurred it would be a simple matter to remove the head of the bone. In connection with Dr. Beecher's question, I can say that in severe cases of epiphyseal fracture which I have had under observation for several years, I can detect no difference in the length of the humeri of the two sides.

(*To be concluded.*)

LA SALLE COUNTY (ILL.) MEDICAL SOCIETY.

Meeting of May 10, 1887.

DR. J. O. HARRIS, of Ottawa, Ill., read a paper on

THE PRODUCTION AND USES OF MOIST HEAT IN THE TREATMENT OF DISEASE, OR AN EFFICIENT MEANS OF PRODUCING SPEEDY DIAPHORESIS.

He described his method of developing moist heat, and illustrated its practical application substantially as follows: Get a tinner to make a round tin box, eight inches in diameter and four inches deep; have him attach an open handle or socket three inches long and one and a quarter inches in diameter on one side near the top; attach a hinged cover perforated with one half or five eighth inch holes; bend at right angles two pieces of tin doubled, half inch in diameter, across the cover; then put a wooden handle fifteen inches long, in the socket, and your apparatus is ready. Being called to a case presenting all the symptoms of a congestive or pernicious chill, he sends a messenger for a quantity of unslacked lime, and while waiting his return gives the patient ten grains of Dover's powder, and has some woolen sheets or blankets brought and his patient placed between them. As soon as the lime is at hand he partly fills the tin box with it, pours over it a pint of hot water, closes down the cover, places the box between the patient's legs, and tucks the blankets down close around the patient. In ten minutes he says the chill has disappeared and the patient is bathed in profuse perspiration. In half an hour he allows the moist flannel sheets to be removed and replaced by dry warmed cotton ones, and directs the necessary antiperiodic remedies for preventing a recurrence of the chill. Dr. Harris further illustrates the efficiency of his method by the two following cases:

Miss F. F. D. had been out on a damp, chilly day while "unwell," with thin shoes, and her monthly flow was suddenly stopped, followed by terrible pains in the pelvis and loins. The use of the tin sweat-box with lime in the manner previously described, speedily induced profuse general perspiration with relief of pain, and in a few hours the menstrual flow had returned.

The other was N. C., a merchant with an unusually severe attack of acute rheumatism, caused by a thorough wetting while out hunting and overtaken by a cold rain. Being called the next evening, and finding the patient suffering intensely, he gave him at once a powder composed of pulv. opii grs. iss, nit. pot. grs. x, and pulv. zinziber grs. ij, and went out for his sweat-box and lime. Returning he applied it between the legs of his patient under woolen coverings, in the same manner as previously described. At first the patient was disposed to ridicule the remedy, but soon admitted that it was getting warm, a little later asked to have some of the heat "let out," and finally declared he was being "cooked alive." "The result of the operation was that in less than an hour my patient was free from pain, and by noon the next day was walking around the store."

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

St. John Ambulance Association—Salicylate of Mercury—Salicylate of Lithia—Visceral Symptoms in Acute Rheumatism—Ether an Adjuvant to Strophanthus—Homœopathy in Liverpool—Loss of the Nails in Telegraph Operators.

The work of the St. John Ambulance Association has attained a magnitude that could hardly have been anticipated at the time of its commencement in 1877. The Annual Report of that organization shows that it has established administrative centers in all parts of the World. Its object is to disseminate sound information as to the best means of affording first aid to the injured. Ten years ago its beneficent proposals were received with very general reserve. To be able to give trained and intelligent assistance in case of accident was obviously very desirable for everybody, but the practicability of rendering the generality of persons capable of doing

so seemed to many very doubtful. The Association has now 270 administrative centers and considerably over 100,000 certificated pupils, all of whom have passed through a course of instruction fitting them to deal in a skilful and rational method with any of the ordinary accidents of life until professional aid can be procured. Last year 15,751 "First Aid" certificates were granted, 8,869 having gone to men students, and 6,882 to women. There is something perhaps slightly fantastic in this Association setting up classes in China to show the natives how to deal with a broken leg or a dislocated ankle until the doctor arrives. One such class was last year established at Kaiping Mines, 80 miles from Tiehtsin. An ambulance corps was also established in connection with the Midland Railway's carriage works at Derby, and also classes were trained of Metropolitan Railway employès at Baker Street Station. This organization is certainly proving immensely useful to the police in various parts of the Kingdom and the Metropolitan men appear to be taking to the training with very creditable zeal. Its practical utility received signal illustration on the day of the Jubilee service when no fewer than from 500 to 600 casualties were treated.

Two new salicylates have been recently introduced into therapeutics, salicylate of mercury and salicylate of lithia. Salicylate of lithia is insoluble, and the best method of obtaining it is to act upon the carbonate of lithia by salicylic acid as follows: twenty grams of the carbonate suspended in distilled water, are placed in a porcelain dish, and the mixture slightly warmed, whilst the salicylic acid is gradually added as long as any carbonic acid is evolved. This will take about eighty grams of commercial salicylic acid as pure as possible. Consequently the lithia salt of salicylic acid, contains about three-sixths of its weight of the latter. When the evolution of carbonic acid gas has ceased, there is found an abundant and dense precipitate, this is washed with distilled water and dried. It is recommended to use this salt at the dose of three grams every two hours, increasing or diminishing the dose according to the case.

The salicylate of mercury is a greyish white color, insoluble in water, and up to the present has been found a good preparation for being made into ointments, one to twenty-five of vaseline.

Dr. William Robinson has drawn attention to an interesting case of acute rheumatism under his care, in which the visceral affections eclipsed those of the joints. It occurred in a young woman aged 17 years. When first seen she was in bed with severe pain in abdomen, increased on pressure, pulse 110, temperature 99.4° F. and all the symptoms of acute peritonitis. There were no signs of pelvic or renal disease and normal menstruation had ceased five days before. For the first week pain was kept under by opiates, the temperature rose to 103° and the breathing was altogether costal. At the end of the week severe pain paralyzed the right knee, it became very tender but was neither red or swollen, the temperature rose to 104°, and signs of pericarditis developed. After two days the left shoulder was attacked with acute pain, also without redness or swelling, the right knee at the same time becoming free. In a few days the left elbow followed suit. As the pericarditis developed, the abdominal symptoms gradually subsided but double pleurisy with effusion came on. At the end of the second week the pericardial mischief greatly increased, the heart impulse being felt on a level with the nipple. From this time up to the end of the fifth week gradual improvement took place, the abdominal tenderness, tympanites and increased heart dulness had almost gone and the temperature and pulse had become normal, when a relapse of peritonitis recurred and pain returned to her left shoulder, the patient again suddenly recovered, but was left with a systolic bruit. Dr. Robinson drew attention to the extreme rareness of peritonitis occurring in acute rheumatism, the affection being chiefly mentioned and described by French writers.

Dr. F. Broadbent finds that the addition of ether to the dose of strophanthus of great use in cardiac affections. When he first used strophanthus in cases of heart disease he was invariably unfortunate in his results until ether was used in combination, recently in a case of very bad double pneumonia, with heart failure he combined strophanthus with an expectorant; the case got rapidly worse, the respiration going up to 65, the pulse to 130 and the patient became cyanotic. As a last resource strophanthus and ether only were given, the symptoms began to abate immediately and the patient made a rapid recovery.

The new homœopathic hospital has been formally opened at Liverpool. The erection of an institution to be devoted entirely to homœopathic treatment of disease was decided on three or four years ago by Mr. Henry Tate, the well-known sugar refiner. It is at present intended to contain fifty beds, but capable of being enlarged to contain twenty or thirty more. There are large male and female wards, convalescent rooms, two infectious wards, completely isolated from the rest of the building, separation wards and private wards, together with carefully arranged offices, medical officers' and nurses' rooms, etc. The greatest possible attention has been paid to the drainage and the means of warming and ventilation. Ever since the first homœopathic dispensary was opened in 1841, Hahnemann's form of treatment has been growing more popular in Liverpool. In 1867 a second dispensary was opened and in 1885 the indoor and outdoor patients treated at these establishments numbered 78,881 or a weekly average of 1,516. The cost of the building has been £20,000. The day preceding the opening the twenty-third annual conference of "homœopathic" practitioners was held in the building, and much stress was laid on the want of a first-class "homœopathic" surgeon, and hopes were expressed that one would speedily arrive in Liverpool.

A new ailment is stated to have shown itself among telegraph operators, namely the dropping off one after the other of the finger nails; two cases have recently occurred in otherwise healthy subjects; the curious affection is thought to be due to the constant jar caused by hammering and pushing with the finger ends in working the Morse system of telegraphy.

G. O. M.

DOMESTIC CORRESPONDENCE

CATHETERIZATION OF THE EUSTACHIAN TUBE.

Dear Sir:—In THE JOURNAL of October 15 there was published a letter from Dr. Enfield concerning the faucial method of introducing the Eustachian catheter. The doctor cauterized the Eustachian tube per fauces because the nasal septum was so deflected as to render the introduction of the catheter through the inferior meatus impracticable. It did not seem to occur to him, and I have observed that it does not to many others, to catheterize through the opposite nostril, to the advantage of which the deflection has taken place. This can be accomplished in the majority of cases, and obviates the necessity of introducing the catheter through the mouth and fauces. Deflected septa and hypertrophied turbinated bodies are very common in adults, and often constrict the inferior meatus to such a degree as to make it very difficult to insert the catheter of ordinary calibre. In such cases the smallest silver catheter, with the beak but slightly curved, may often be passed by engaging the point under the end of the inferior turbinated body, rotating the catheter upon its axis, elevating its proximal end and, at the same time, carrying the instrument backward toward the orifice of the Eustachian tube. After placing the catheter in the initial position, if one allows it to direct its own course, as it were, when it meets with obstruction, it will generally find its way through, even if the spiral line pursued by the beak quite describes a circle. There are cases in which the unyielding silver catheter cannot be introduced, where we may succeed with the small hard rubber catheter, the flexibility of which permits of its easy adaptation to considerable inequalities and curves in the inferior meatus.

These facts are mentioned for the benefit of any cases that cannot be catheterized through the nostril opposite to the tube we wish to reach. However, those cases must be rare in which it is impossible to pass a catheter through one or the other nostril; for, as common as deflection of the septum and hypertrophied turbinated bodies are, I do not recall a case in which it was not possible to catheterize through one meatus. It should not be forgotten that a curve of the septum toward one nostril increases the capacity of the other; and with the amount of thickening of the septum which usually accompanies this deflection there is left ample room for the entrance of a small catheter. Another important point must be observed: In order to reach the Eustachian aperture through the nostril of the opposite side, the beaks of our catheters should be given a curve describing an arc of a greater circle than we find in them as they come from the instrument makers. This curve should be sufficient only to reach the orifice of the opposite Eustachian tube, otherwise it will impede the passage of the catheter through the nostril.

I have practiced this method for several years, and have found it appreciated by patients, inasmuch as it removes one-half the discomfort of treatment and saves time. The success attending this method may be easily demonstrated by means of the auscultating tube.

That catheterization per nasum is more simple and more certain of success than per fauces, except in case of cleft palate, needs no elucidation. Very truly yours, S. S. BISHOP, M.D.

719 W. Adams St., Chicago.

SUDDEN DEATH FROM HEART DISEASE.

Dear Sir:—On September 27 Dr. J. E. Chandler, æt. 27, of Rowley, Iowa, while in his office and in the act of placing upon the table a pair of tooth forceps with which the moment previous he had extracted a patient's tooth, fell instantly dead without uttering a word or sound. Dr. Chandler was a recent and specially competent young graduate in medicine, and a former student in the office of Dr. G. G. Wilson, of this city.

Some years ago the deceased suffered a severe rheumatic attack, although not arthritic in type. For two or three years he has developed heart symptoms, including a mitral systolic murmur. This condition was not of sufficient gravity to interfere with his business and was, in fact, unknown by most of his intimate friends. Some four weeks previous to his death he was examined by the writer for a suspected organic liver trouble, the functions of the liver being impaired, with loss of appetite and nausea. The liver was found normal, and with the use of usual treatment the symptoms rapidly abated and, aside from some remaining debility, the doctor had recovered his former and usual condition. At the examination referred to he made no allusion to his heart, and nothing in his appearance, or symptoms with which he complained, then directed attention to it. There was no autopsy.

Will some one explain how a lesion of the heart so slight in its previous effects can produce instant death? H. C. MARKHAM, M.D.

Independence, Iowa.

PLEASE WRITE PLAINLY.

Dear Sir:—Through the recent offer made in your advertising pages to send our complimentary sample of Platt's Chlorides to any physician still unacquainted with it, we have received many hundreds of requests, which we have complied with, with pleasure. But there will be a few who will be disappointed by reason of their own carelessness or thoughtlessness in writing, it having been either impossible to decipher the name or the P. O. address, or the latter has not been fully given. For instance, one physician gives his P. O. address as simply Harper's Ferry, not naming the State. There being a Harper's Ferry in Iowa, one in Kentucky and another in West Virginia, it was impossible to tell where to send our sample, as, in this instance, the physician's name was not in any of our directories, and the post-mark was entirely obliterated. We will continue our offer to send samples (expressage prepaid by ourselves) for a

few weeks yet, and would kindly ask those requesting same, to enclose their card, or to write on a letter head giving the name and address in print.

Most respectfully,

HENRY B. PLATT.

36 Platt St., New York.

NECROLOGY.

DAVID RICE, M.D.

DAVID RICE, M.D., of Leverett, Mass., was born of humble but highly respectable parentage in the town of Rowe, Mass., July 25, 1819, and died at Leverett, Mass., of dropsy of the heart, August 29, 1878. His boyhood was spent at his native place. He was always hard-working, boy as well as man. He taught school one or two terms in Rome. When about eighteen he left his home and went to Berkshire Medical College, Pittsfield, Mass., where he graduated with high honors in 1842. Thence he went to Leverett and entered into partnership with the late Butler Wilmarth, M.D., who was a victim of the terrible Norwalk disaster in 1853. Dr. Wilmarth and Dr. Rice were like brothers all their lives, and were in partnership for many years, when finally Dr. Wilmarth became a homœopathist and settled in Hopedale, and Dr. Rice remained in L., where he practiced medicine for forty years. He stood foremost in his profession, and was beloved by all his medical brethren, who looked upon him as a physician of sound judgment and high integrity.

He was, very early in his professional life, a member of the Massachusetts Medical Society. He wrote many articles for the medical journals, one of which was copied into the London *Lancet*, referring to an instrument of his own invention, for extracting fish bones from the throat.

In July, 1844, he married Miss Harriet Clapp, of Chesterfield, who was a graduate of Mt. Holyoke Seminary in 1842. Mrs. Rice was a lady of high culture and proved herself a loving helpmate for forty years of wedded life. In the latter years of her life she was associated with her husband in the practice of medicine, and had a most successful practice before and after his death, until her decease in 1885.

Dr. Rice was an associate member with Butler and Sumner in the House of Representatives in 1853; both were very warm friends of his, as after-years proved by the many mementoes sent him by them. He became a member of the American Medical Association in 1865.

The Doctor was a loving husband and tender father, as well as a kind and charitable neighbor and citizen, and honest in all his dealings. Always a sunbeam in the sick-room, and when his tired spirit took flight to the mansions of rest, it was on every one's lips, "*How can we* spare him?" He was always untiring in his efforts to save life. He was a Christian man and a very prominent member of the Congregational church for many long years, always ready to do his part, and for many years a member of the choir. He was influential as well as public spirited, and was for many years chairman of the school committee. He was buried with Masonic ceremonies, being a member of that order. J. E. W.

JEFFERSON PRATT, M.D.

Jefferson Pratt, M.D., of Hopkinton Mass., was born in Belchertown, Mass., June 6, 1803, the youngest of a family of sixteen children. His father was a captain in the Revolutionary Army. He was a graduate of Berkshire Medical College, Mass., and commenced the practice of medicine and surgery in Hopkinton in 1827. In 1829 he married Miss Harriet Valentine Harrington, of Hopkinton, who with two daughters survive him. He was a member of the Massachusetts Medical and other societies, was a man of strong individuality, and comprehensive in his diagnosis and treatment of disease. He was a member of the American Medical Association from 1856, and attended meetings in 1858, 1864, 1865, 1868 and 1870.

After a successful practice of more than fifty years, he died suddenly at the residence of his daughter, Mrs. J. C. Whitin, of Hopkinton, in 1883, having just returned from a family picnic.

M. G. P.

BOOK REVIEWS.

THE PRINCIPLES OF ANTISEPTIC METHODS APPLIED TO OBSTETRIC PRACTICE. By DR. PAUL BAR, Accoucheur to, formerly Interne in, the Maternity Hospital, Paris, etc. Translated by HENRY D. FRY, M.D, 8vo, pp.vii–175. Philadelphia: P. Blakiston, Son & Co. 1887. Chicago: W. T. Keener.

Those who have some doubts as to the value of antisepsis in obstetrics should read Dr. Bar's book and have them removed. Those who have no faith at all in antiseptic obstetrics should read it, if they are still open to conviction, for the purpose of seeing if they may not be mistaken in their views. Those who thoroughly believe in practicing obstetrics on antiseptic principles should read the book in order to be doubly assured that they are right in their practice. For while the reader will soon discover that the author is an enthusiastic believer in the use of antiseptics in obstetrics, he will see at the same time that Dr. Bar is a conservative enthusiast; he never lets his enthusiasm carry him beyond the point of being guided by precise indications alone in his practice and teachings. Nor will any one wonder at his enthusiasm after reading the third chapter, on "Influence of Antiseptics on Puerperal Epidemics."

Probably most physicians in this country have become somewhat familiar with the subjects of the greater number of chapters in Dr. Bar's book. But nevertheless, the author presents his material in a pleasing manner, and often in a new light; and no one, after reading the book, can claim that it is dull

or that he has wasted his time. The first chapter on the "Relation of the Germ Theory to the Puerperium," and a part of the second chapter, on "The Antiseptic Method and Agents," are the key to the whole subject, and we think that some readers, at least, will find in them much that they have given no attention to before.

Considering its small size the book contains a very great deal. The subjects of the first three chapters have been mentioned. The other chapters deal with: Disinfection as an Antiseptic Measure; Hygiene of the Puerperium; Antisepsis during Labor; Antisepsis during the Third Stage of Labor; Antisepsis during the Puerperium; Antisepsis in Catheterization; The Antiseptic Method in Rupture of the Uterus; The Antiseptic Method in the Cæsarean Operation; and an appendix on "Antisepsis to the Umbilicus," and "Ophthalmia Neonatorum." Every physician who does obstetric work should study this book.

PULMONARY CONSUMPTION. Its Etiology, Pathology and Treatment, with an Analysis of 1000 Cases to Exemplify its Duration and Modes of Arrest. By C. J. B. WILLIAMS, M.D., LL.D., F.R.S., etc., and CHAS. F. WILLIAMS, M.A., M.D., etc. Second Edition, enlarged and rewritten by Dr. C. F. Williams. 8vo, pp. 446. With four colored plates and ten wood-cuts. Philadelphia: P. Blakiston, Son & Co., 1887. Chicago: W. T. Keener.

The first edition has made this work known to the profession. We can not here describe it with the detail that it deserves. The chapters on pathology are interesting and accurate. These are well illustrated. The colored cuts are admirable, showing the appearance and distribution of tubercle bacilli—the tissues. In connection with the characteristic lesion of tubercular phthisis are described the various secondary changes brought about in the lungs and thorax generally, such as displacement of organs, modification of the shape of the chest, etc. The chapter devoted to the "Predisposing Causes of Consumption" is also most interesting and instructive. The subject of treatment is considered in chapters, with the following headings: "Prophylactic and Anti-Phthisical;" "Climatic Treatment of Consumption;" "Antipyrexial;" "Palliative Treatment of Consumption;" and "Antiseptic or Bacillicide Treatment." The last chapter, while it covers completely the ground of antiseptic treatment of phthisis, does not furnish us much hope of successfully combatting the disease in this way. Without doubt the prophylactic treatment remains the most important.

MISCELLANEOUS.

HEALTH IN MICHIGAN.—For the month of October, 1887, compared with the preceding months, the reports indicate that bronchitis, pneumonia, remittent fever, scarlet fever, diphtheria, and tonsilitis increased, and that diarrhœa, dysentery, cholera morbus; cholera infantum, and typhoid fever decreased in prevalence. Compared with the preceding month, the temperature in the month of October, 1887, was considerably lower, the absolute humidity was much less, the relative humidity was less, the day and the night ozone were more. Compared with the average for the month of October in the nine years, 1879–1887, intermittent fever, consumption of lungs, diphtheria and diarrhœa were less prevalent in October, 1887.

For the month of October, 1887, compared with the average of corresponding months for the nine years, 1879–1887, the temperature was considerably lower, the absolute humidity was less, the relative humidity was the same, the day ozone was slightly more, the night ozone was less. Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of October, 1887, at fifty-eight places, scarlet fever at thirty-six places, typhoid fever at forty-five places, measles at twelve places, and small-pox at one place. Reports from all sources show diphtheria reported at seven places more, scarlet fever at five places more, typhoid fever at one place less, measles at seven places more, and small-pox at the same number of places in the month of October, 1886, as in the preceding month.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S ARMY, FROM OCTOBER 29, 1887, TO NOVEMBER 4, 1887.

Capt. Paul R. Brown, Asst. Surgeon, leave of absence extended one month. S. O. 250, A. G. O., October 27, 1887.

Capt. Chas. B. Byrne, Asst. Surgeon, ordered for temporary duty at Ft. McHenry, Md. S. O. 231, Div. Atlantic, October 28, 1887.

Capt. Curtis E. Munn, Asst. Surgeon, relieved from duty at Ft. Canby, Wash. Ter., and ordered for duty as Post Surgeon at Ft. Klamath, Oregon. S. O. 251, A.G. O., October 28, 1887.

Capt. G. W. Adair, Asst. Surgeon, the leave of absence for seven days granted on the 27th inst. by the commanding officer, Ft. Brady, Mich., is extended twenty-three days. S. O. 231, Div. Atlantic, October 28, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING NOVEMBER 5, 1887.

Surgeon P. Fitzsimmons, ordered to the U. S. S. "Marion."

Asst. Surgeon L. W. Atlee, ordered to the U. S. S "Marion."

Medical Inspector N. L. Bates, ordered to the U. S. S. "Trenton."

P. A. Surgeon Henry G. Beyer, ordered to the U. S. S. "Trenton."

Asst. Surgeon Stephen S. White, ordered to the U. S. S. "Trenton."

P. A. Surgeon P. M. Rixey, detached from the U. S. S. "Trenton" and wait orders.

P. A. Surgeon Richard Ashbridge, ordered to the U. S. S. receiving ship "St. Louis."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING NOVEMBER 5, 1887.

Surgeon C. S. D. Fessenden, detailed as chairman of Board for the physical examination of officers of the Revenue Marine Service. November 1, 1887.

P. A. Surgeon F. W. Mead, detailed as recorder of Board for the physical examination of officers of the Revenue Marine Service. November 1, 1887.

P. A. Surgeon A. D. Bevan, relieved from duty at Portland, Oregon.; ordered to Marine Hospital, New York. November 2, 1887.

P. A. Surgeon P. M. Carrington, relieved from duty on Revenue Str. "Rush;" ordered to Marine Hospital, San Francisco, Cal. November 2, 1887.

Asst. Surgeon T. B. Perry, relieved from duty at Marine Hospital, San Francisco, Cal.; ordered to assume charge of Service at Portland, Oregon. November 2, 1887.

Asst. Surgeon H. T. Goodwin, relieved from duty at Norfolk, Va.; ordered to Marine Hospital, New Orleans, La. November 5, 1887.